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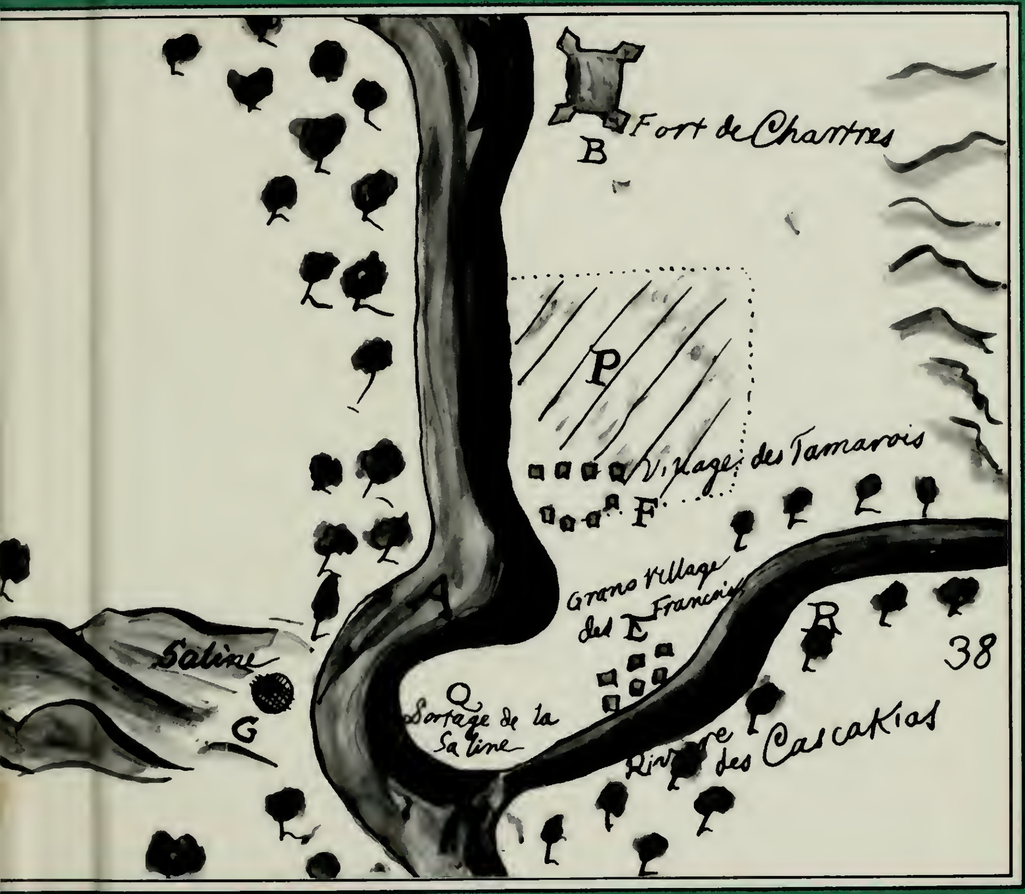
Probable Location of Fort de Chartres I

Edward B. Jelks, Carl J. Ekberg,
and Terrance J. Martin



Studies in Illinois Archaeology No. 5
Illinois Historic Preservation Agency

ILLINOIS HISTORICAL SURVEY

Excavations at the Laurens Site

Studies in Illinois Archaeology
Number 5

Thomas E. Emerson, Series Editor
Michael D. Conner, Center for American
Archeology, Volume Editor

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Illinois Historic Preservation Agency
Springfield, Illinois

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—All material from the excavations reported here is curated at the Illinois State Museum in Springfield, Illinois.

—The cover illustration is taken from a map by François-Benjamin Dumont de Montigny (see Figure 4); the map is used courtesy of the Clements Library, Ann Arbor, Michigan.

CHAPTER 1: INTRODUCTION AND HISTORICAL BACKGROUND

The Laurens site (11-R-125) is located in Randolph County, Illinois, on the floodplain of the Mississippi River approximately 4.5 km west of the village of Prairie du Rocher (see Figure 5). This report presents the results of test excavations at Laurens carried out in 1983 and 1984 under the auspices of Illinois State University and the Illinois Historic Preservation Office, Department of Conservation. While very limited in scope and extent, these excavations produced substantial evidence that Laurens is the site of the original Fort de Chartres (referred to as Fort de Chartres I), built about 1720. Therefore, the site is an important cultural resource and source for information on the French presence in the Illinois Country.

Modern scholarly interest in Fort de Chartres I began in the early 1970s when the gifted amateur historian and archaeologist Irvin Peithmann conducted extensive surveys of much of the French Colonial District of southern Illinois. Based on these surveys and surface collections of artifacts, Peithmann concluded that Fort de Chartres I stood at the location now known as the Laurens site (Figure 1). Laurens is approximately 1 km southeast of the Fort de Chartres State Historic Site, where the stone Fort de Chartres (referred to as Fort de Chartres III, see below for a discussion of the construction sequence of the various forts), built during the 1750s, has been partially reconstructed. Upon Peithmann's recommendation, the state of Illinois purchased the property upon which the Laurens site is located. This property is a level, fallow field confined by the Mississippi levee on the southwest and Illinois State Highway 155 on the southeast.

In the autumn of 1971, Margaret Kimball Brown conducted a brief archaeological test at Laurens, excavating a trench 120 feet long (36.6 m) and 2.5 feet wide (6.5 m) and digging one small square. Numerous eighteenth-century artifacts were collected from the 10-inch-deep plowzone (25.4 cm), and three subsurface features were located but not explored (Brown 1971). Brown's testing helped to

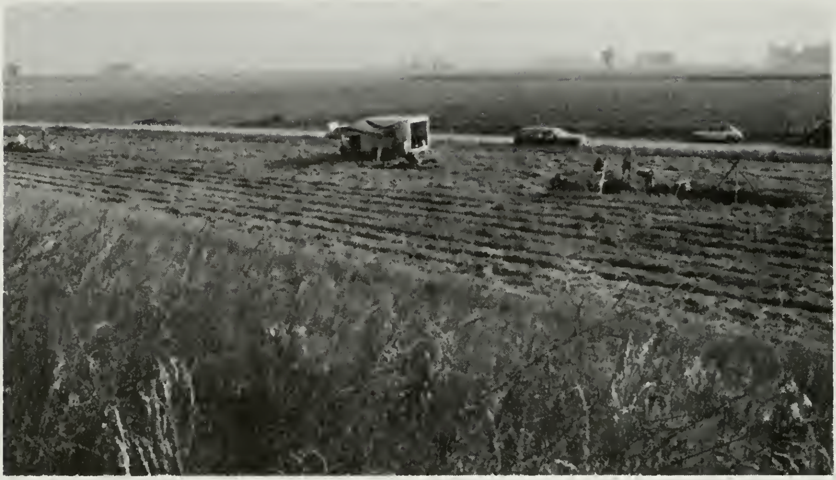

Fig. 1. The Laurens site, at the location of the stain on the aerial photograph; view looking north from top of levee.

maintain ongoing interest in the Laurens site as a potential area for further archaeological work on the French colonial presence in the Illinois Country.

In 1981, further interest in this site was stimulated when F. Terry Norris, District Archeologist for the U.S. Army Corps of Engineers, St. Louis, discovered an aerial photograph (Figure 2) taken in 1928 that showed a rectangular stain in the ground at Laurens. This stain was the proper size and shape for an eighteenth-century French colonial fort, and its location coincided approximately with that selected by Peithmann as the site of Fort de Chartres I.

Norris's discovery prompted the Illinois Department of Conservation to commission chemical soil tests by William I. Woods and a magnetic survey of the site by John W. Weymouth in 1980 and 1981. These studies (Weymouth and Woods 1984) confirmed that there were substantial subsurface anomalies, both chemical and magnetic, at the site.

Coincidentally, while this activity was transpiring, Jelks and Ekberg participated in a study for the U.S. Army Corps of Engineers on French colonial lead-mining west of the Mississippi River, in what is now the state of Missouri (Ekberg et al. 1980). This research indicated that the area around Fort de Chartres I had been used as a logistical base for lead-mining operations west of the Mississippi. Subsequently, Jelks and Ekberg pursued further research in the area in conjunction with Margaret Kimball Brown, then staff archaeologist for the Illinois Department of Conservation. This led to the test excavations detailed in this report.

HISTORICAL BACKGROUND

During the eighteenth century, the Illinois Country (Figure 3) was important to the French colonial empire in North America for numerous reasons: economically, the region produced furs, grain, and lead; geographically, it was the keystone of a vast arch of settlements and outposts running from the St. Lawrence Valley to the Gulf Coast; politically, the Illinois Country established France's claim to the heartland of North America and served as a bulwark against English advances west of the Allegheny Mountains.

In 1673, Father Jacques Marquette, a Jesuit priest, and Louis Jolliet, a fur merchant, passed in their birch-bark canoes through the region that became known as the Illinois Country. Descending (as far as the mouth of the Arkansas River) and ascending the Mississippi River, they were the first Europeans to view the virgin forests and fertile prairies

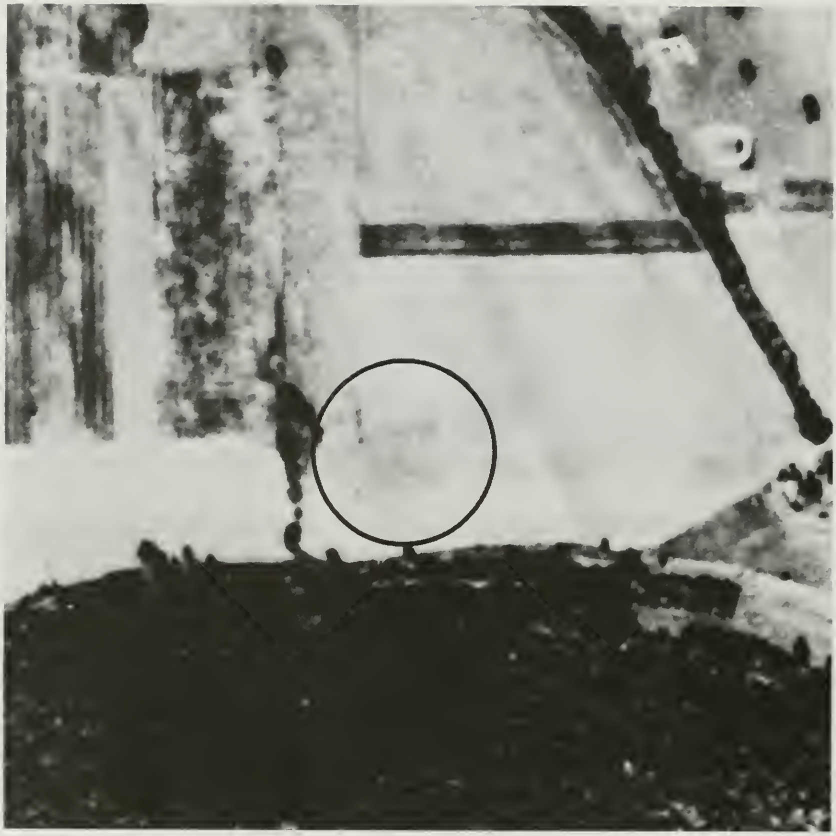

Fig. 2. Aerial photograph made in 1928 showing rectangular stain.

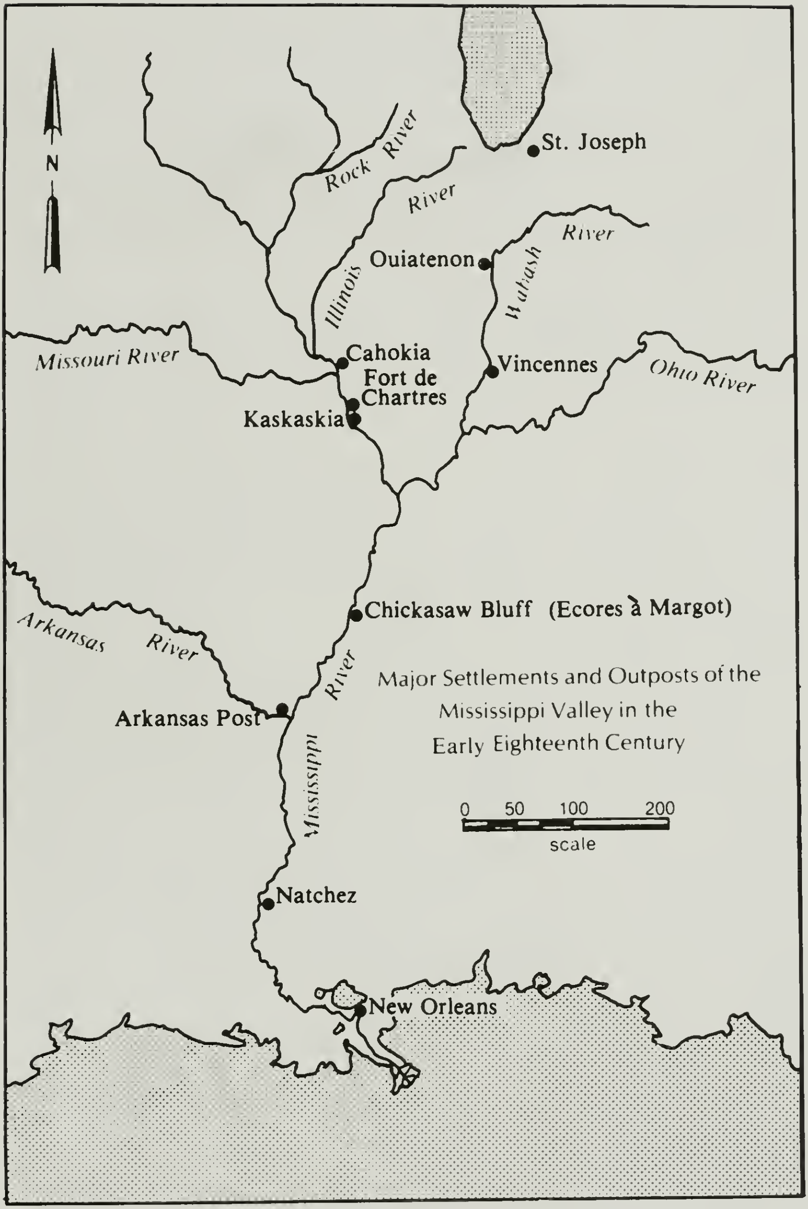

Fig. 3. Major eighteenth-century French colonial outposts and settlements in the Mississippi Valley.

of this temperate portion of North America. By the end of the seventeenth century, numerous Canadian *voyageurs* and Roman Catholic missionaries had become familiar with the Mississippi Valley between the mouths of the Illinois and Kaskaskia rivers. In 1699, missionaries from the Seminary of Foreign Missions in Quebec established a mission center on the east bank of the Mississippi, downstream from the mouth of the Illinois, near a Tamaroa Indian village (McDermott 1952:1–11). Thus was founded Cahokia, the first of the permanent French villages in the Illinois Country.

Four years later, in 1703, missionary rivals of the Seminarians, the Jesuits, led the Kaskaskia Indian tribe down the Mississippi some 100 km below Cahokia and founded the second French village in the region, Kaskaskia (Belting 1948:10–23). This settlement was located on the north side of the Kaskaskia River just upstream from its confluence with the Mississippi. It consisted of fur traders, agriculturists, Jesuit priests, and Indians. Cahokia and Kaskaskia were remote from the main French establishments in the St. Lawrence Valley and on the Gulf Coast (near Mobile Bay), and at the time of their founding there was no offical French political or military presence in the communities, which were self-sustaining and self-governing.

Between 1703 and 1717, the population of the Illinois settlements, which at that time was mostly French-Canadian, continued to grow. The pattern of migration from Canada to the Illinois Country seems to have been as follows: French-Canadian men living in the St. Lawrence River corridor between Montreal and Quebec traveled first to the Mississippi Valley as *voyageurs* engaged in the fur trade. Canadian government archives in Montreal (Archives Nationales du Québec à Montréal) contain literally thousands of contracts of *engagements* for these *voyageurs*, who were usually called *engagés*, meaning "the hired ones." Many of the names that appear in these contracts eventually became common in the Illinois settlements—Aubuchon, Bourdon, Lalande, La Vallée, Renault, Chauvin, and so forth. After having gotten their first taste of the Illinois Country as *voyageurs*, many of these men decided to return to the Mississippi Valley with their wives and families; others settled in the valley and took Indian wives. By late in the second decade of the eighteenth century, the Illinois Country, with its twin nuclei of Cahokia in the north and Kaskaskia in the south, contained a French population large enough to be of interest to government officials in Louisiana and France.

In 1717, the Bourbon monarchy in France restructured the administration of its colonies in North America. The Illinois Country was removed from Canadian jurisdiction and incorporated into Louisiana, and in 1718 all of Louisiana, including the Illinois Country (Upper Louisiana), was turned over to the control of a royal chartered enterprise, the French Company of the Indies (Giraud 1966, 3:chap. i). This administrative shuffling provoked much interest in France over Louisiana as a region that could be exploited economically and also stimulated important developments within the colony. New Orleans, destined to become the metropole of Louisiana, was founded by Jean-Baptiste Le Moyen, sieur de Bienville, in 1718, and later the same year officers, detached marines, and administrators were dispatched from Lower Louisiana to the Illinois Country (Archives Nationales [hereafter AN] B 42:fols. 230–232). The purpose of this imposing expedition was threefold: establish a military presence in the region, create a civil government, and provide a base of operations for the Company of the Indies.

The convoy of *bateaux* that ascended the Mississippi to the Illinois Country during the autumn of 1718 carried three important persons: Pierre Duqué, sieur de Boisbriant, appointed commandant of the Illinois Country; Marc-Antoine de La Loëre des Ursins, a director of the Indies Company; and Nicolas Chassin, storekeeper of the company. These men, together with a group of detached marines, arrived in the Illinois Country late in 1718 or early in 1719 and settled temporarily at the village of Kaskaskia, for there was at that time no military outpost of which they could assume command. Their first task was to construct a fort to serve as a base for both civil and military operations.

Documentary sources concerning activities in the Illinois Country for the period 1719–1723 are scarce, but those that exist in various French archives (Archives Nationales, Archives de la Guerre, and the Bibliothèque Nationale) suggest that plans progressed slowly. Boisbriant reconnoitered both sides of the Mississippi before deciding to build his fort "six leagues by land and twelve by water" (Artaguiette 1916:68) up the Mississippi from Kaskaskia (Figure 4). Why Boisbriant decided to place the fort and seat of government in the Illinois Country at some considerable distance from the principal concentration of population in the region (i.e., Kaskaskia) is not entirely clear. Years later (1736), Governor Bienville remarked that the location of Fort de Chartres I had been selected because of its central position—between Cahokia to the north and Kaskaskia to the south, and in the midst of the various Illinois Indian settlements in that region (AN, C13A 21:fols. 60–62).

Between 1719 and the end of the French regime in the Illinois Country (1763), the French built, to the best of our current knowledge, at least three discrete versions of Fort de Chartres in the same general

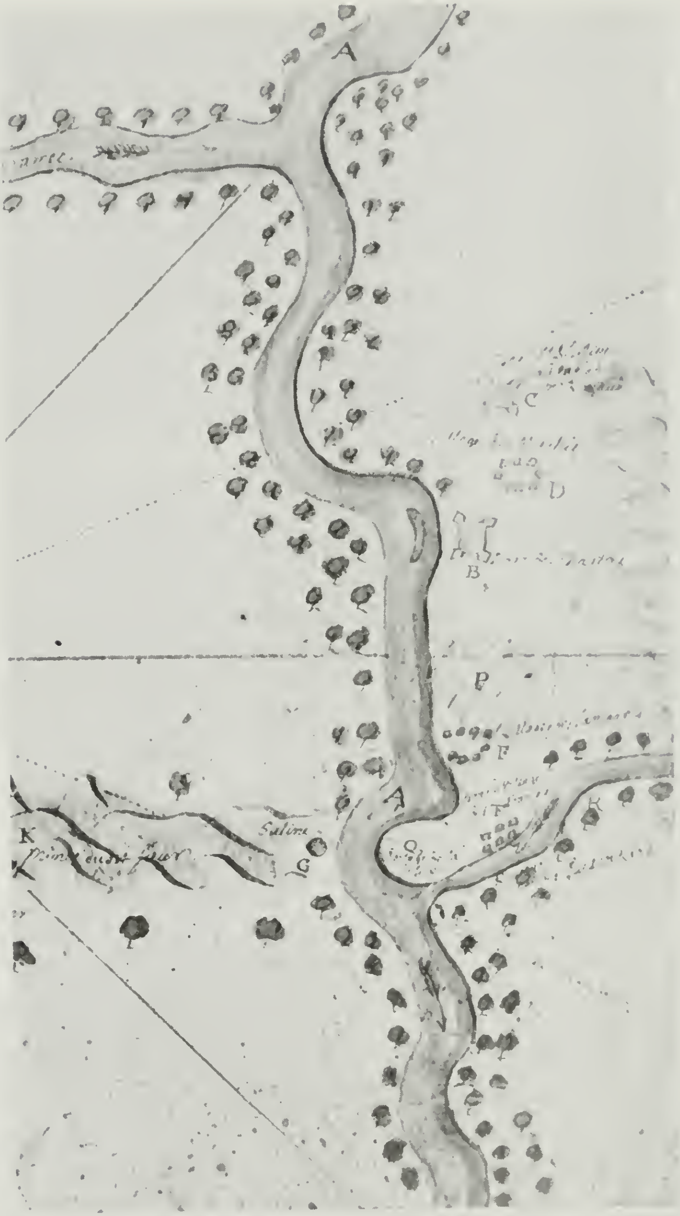

Fig. 4. Detail from map done by François-Benjamin Dumont de Montigny in the 1720s. This was the first map to show a Fort de Chartres. If the map was intended to show the first fort, it is incorrectly shown with four bastions. (Figure courtesy of Clements Library, Ann Arbor, Michigan.)

vicinity (Price 1980:1–4). Fort de Chartres I, a wooden palisaded structure, was contructed in 1719–1720; Fort de Chartres II, also palisaded, was built during the late 1720s; and Fort de Chartres III, the only one made of stone, was erected during the 1750s and is now being rebuilt on its original foundations. Our excavations led us to conclude that Laurens contains remains that are almost certainly those of Fort de Chartres I.

Boisbriant's other possible reason for choosing this site for the fort was that it provided easy access to the lead mines west of the Mississippi. Philippe Renaut, a mining entrepreneur, arrived in Louisiana in 1719 and soon ascended the Mississippi to the Illinois Country (Giraud 1966, 3:178–179). In early 1721, a report was sent from Louisiana to the French government (Archives de la Guerre [hereafter AG] A1:fol. 104) that stated "the success that Sieur Renaud will experience will serve to induce others to come and work the mines." Two years later, Renaut received extensive concessions both west and east of the Mississippi (Kaskaskia Manuscripts [hereafter KM] 26–6–14–1); on the latter he established the settlement of St. Philippe, named in honor of his patron saint, which was intended to serve as a logistical base for his mining enterprises in the Illinois Country.

Boisbriant named Fort de Chartres in honor of Louis, duc de Chartres, son of the regent of France, Philippe d'Orléans. In April 1721, one Monsieur Lallement reported from Kaskaskia that he had paid his respects to "Monsieur de Boisbriant, commander of the place, who is adored by the inhabitants because of his agreeable manners. He lives in the new post, six leagues from here by land and ten by way of the Mississippi. This new post is beginning to take shape and later it will be a beautiful place" (AN, Archives du Service Hydrographique de la Marine, Cartes et Plans, 115^{x}, no. 29). The stockade was apparently completed by 1721, and in 1723 one of the French officers in the Illinois Country, Diron d'Artaguiette, provided the only good description that we have of the structure:

> We left here [Kaskaskia] and arrived at five o'clock in the afternoon at Fort de Chartres, which is on the bank of the Mississippy, on the right as you ascend. . . . Fort de Chartres is a fort of piles the size of one's leg, square in shape, having two bastions, which command all of the curtains. [Artaguiette 1916:68]

Within this structure resided a garrison of 60 marines (AG, A1 2592:fol. 126), and by 1724 the village surrounding the fort consisted of

39 *habitants* (land-owning farmers), 42 white laborers, 28 married women, and 17 children (AN, C13A 8:fol. 226). Jesuit missionary priests recorded the first baptisms in the village of Chartres in 1721 (Brown and Dean 1977:5), and this community soon developed into the parish of Ste. Anne, which survived until the British assumed command of the Illinois Country in 1765. The earliest extant civil records for Fort de Chartres date from 1723, and they reveal that in May of that year a local craftsmen, P. Bienvenu, was hired to build at the fort a counting house for the Company of the Indies (KM 23–5–13–1). Thus, by the mid-1720s the community of Chartres was a budding center of the French colonial empire in North America.

The community of Chartres, with its problems and prospects, was described in 1724 by Commandant Boisbriant in a memorandum written for the Directors of the Company of the Indies (AN, C13A 8:fols. 447–450):

> Those who have provided you particulars on the Illinois Post could report only favorable things. This is as true for its location, which is very agreeable, as it is for the fertility of its soil, which would be as productive as that of France if the farmers were free to pursue their labors in safety.
>
> The Foxes lie in wait around our French and Indian settlements every summer, or rather, almost all year long. This means that the *habitants* do not dare venture out except in groups, and you can judge how difficult this makes things. The militia units that I have established here are often compelled to maintain guard. This summary will permit you to understand, messieurs, that the war that is always feared prevents the people here from fulfilling their natural desire to increase their work.
>
> Nonetheless, messieurs, despite the little help from the Negroes and the goods that have been distributed at this post, I can assure you that you would not believe the work that has been accomplished since my arrival here.
>
> Everyone is devoted to agriculture. They have sown wheat, which is coming along very well for the season. Wheat was being sown at the beginning of March. But I noticed that it was not in the ground long enough to be properly nourished and that it was not cold enough here to prevent the wheat from wintering in the ground. Thus I made the first attempt at sowing wheat in the autumn,

which worked so well that the *habitants* decided to plant all of their wheat in the autumn. Reckoning future harvests on the basis of the last harvest from my plantation, I believe that the upper colony [of Louisiana] can supply wheat for the lower colony, provided that enough Negroes are allocated to aid with the work, which would undoubtedly be advanced with such assistance.

The war [with the Foxes] that prevents the *habitants* from pursuing their labors also creates another big problem, which is that the Indians are afraid to leave their villages and go out on the hunt, for they may be attacked or taken prisoner. All of this, messieurs, will make you see how important it is to destroy the Foxes.

The different minerals that I have sent to France suggest that there are several different sorts of mines in Illinois, and that we only lack men who know how to work them and a labor supply in order to make them productive. The lead mine is the richest, and the one that is the most productive at this time. There are also numerous copper mines, but we need men who are able to determine which are good enough to work.

The Company [of the Indies] not being in a position to supply, over the long term, beverages for this post, I believe that it would be appropriate to allow the planting of local vines, which would never produce enough good wine to interfere with the commerce in wine from France.

The only reason that flax and hemp have not been planted here is because the Directors of the Company have prohibited it. However, seeing that this post is so far removed from New Orleans that the *habitants* cannot get enough canvas for their own use, I believe that it would be appropriate to give the *habitants* of this post the liberty to plant them for their own use, and in order to maintain their Negroes. This would in no way prejudice the commerce in fine canvas from France given the fact that they would only produce very rough canvas and in very small quantities.

The company seems surprised to see no peltries being shipped from Illinois. I believe that I have already had the honor of remarking that there will be no hope of getting any while the war with the Foxes continues. If, on the other hand, that tribe were to be destroyed, it would be rather easy for Monsieur de Vaudreuil [governor general of Canada] to engage the Illinois tribe and other tribes of Missouri to go after beaver. And from what I have heard lots of them could be harvested. As they are obliged to seek them [beavers] near the Foxes where there is no safety, they prefer to engage in the business of hunting and drying meat, which they sell to the French. That commerce would not continue if the Foxes were defeated because then the French could supply themselves with the necessary meat. Then the Indians would be obliged to get involved in the fur trade in order to supply their needs.

These same Foxes are the reason why it is impossible to have contact with the Sioux, from whom a prodigious quantity of beaver would be available. The Sioux have via the Missouri tribes requested to do business with us. But because the Foxes stand in their way, and are stronger, the Sioux cannot do business with us and are in fact compelled to be at war with us.

If Monsieur de Vaudreuil would only execute the orders to destroy the Foxes that he has received from France, which could be easily done with the tribes that are dependent upon Canada (who are only asking that war be declared), we could get a vast amount of pelts from the Sioux and other tribes with whom we are allied on the Missouri. Monsieur [Etienne] de Bourgmont, who knows that region better than anyone and who is departing for France, will report to the Company about the commerce that could be developed there.

The Company's order that no more merchandise was to be sent to the *habitants* in Illinois appears to me to be very prejudicial to this colony. It is impossible for them to go and seek goods at a great distance; it would be better to establish in Illinois an outlet where merchandise could be sold at higher prices. In addition to the long time that it requires to go to New Orleans, these *habitants* cannot afford to abandon their lands and their affairs for that length of time.

It would be very advantageous to establish an outpost on the Wabash, but because up to now it has not even been possible to sustain one in Illinois there is little chance that such an outpost could be established. It is, however, much to be feared that the English will take

> advantage of this opportunity. If they do we would stand to lose the entire upper part of this colony [Upper Louisiana], for with the vast quantities of merchandise that they usually command, it would be easy for the English to win over all the tribes of this region. The Company will please have the goodness to reflect upon these issues.
>
> I cannot guarantee that indigo will do well in this place, for there have never been any seeds to plant here. What is certain is that there is wild indigo in the prairies, which gives rise to the hope that it would do better if cultivated. I will not fail to send some seeds this year.

In the autumn of 1724, Boisbriant returned to Lower Louisiana and Charles-Claude Du Tisné became commandant *ad interim* at Fort de Chartres. According to Du Tisné's letters of January 1725 (Thwaites 1902:450–453), the situation had become desperate in the Illinois Country. "We are killed everywhere by the Renards [Foxes] to whom Canada supplies weapons and powder. . . . I am deprived of everything, without arms or ammunition. If no more succor be Sent to us from The sea, we shall be compelled to abandon this post." Du Tisné's reference to Canada suggests that Canadian fur traders were supplying the Foxes in order to eliminate the fur trade competition in the Illinois Country. In any event, Du Tisné pleaded with his superiors to be reassigned, for "this post [Fort de Chartres] does not suit me." Before the end of 1725, Sieur des Liettes was dispatched from New Orleans to take command of Fort de Chartres (AN, C13A 9:fol. 162).

French colonial soldiers and marines often earned pocket money by contracting to do specified tasks during their off-duty hours. In March 1725 troops from the garrison at Fort de Chartres contracted with the Company of the Indies to begin construction of the palisade wall for a new fort (Brown and Dean 1977:843). Very likely when Sieur des Liettes arrived in the Illinois Country in the spring of 1726 he took command of the fort that had been begun in March 1725. Already by February 1726 parcels of real estate in the region were being described in relation to the "old fort" (Brown and Dean 1977:355). The second Fort de Chartres was a bit smaller than the first, but with a double palisade wall and four bastions it was significantly stronger (AN, C13B 1:fol. 1). Presumably, the threat posed by the ferocious Foxes induced Du Tisné to build the new fort.

The few extant source documents suggest that Fort de Chartres II was not far from the first. A nascent village had begun to develop around the first fort (Briggs 1985:69–76), and there is no evidence that this village had to be relocated en masse when the second fort was constructed. Rather, the village simply grew and the site of the first fort was incorporated into the community, becoming plowland, residential property, or part of the commons; which of these is not entirely clear.

Fort de Chartres I was occupied but briefly, but while in use it served some important purposes. It established an official French governmental presence in Upper Louisiana for the first time. Moreover, it was a springboard from which other important enterprises were launched. As noted above, Philippe Renaut probably used the fort as a first base for his lead-mining operations west of the Mississippi. And, more dramatically, the fort was the jumping-off point for Etienne de Bourgmont's famous expedition up the Missouri River in 1724 (Nasatir 1952, 1:20).

Between 1720 and 1765, the development of the entire Illinois Country, both east and west of the Mississippi, was in large measure contingent upon the existence of a succession of Forts de Chartres. The first of these was built by Boisbriant during 1719–1720, and the probable remains of this structure were the object of the exploratory excavations that Illinois State University conducted at the Laurens site in the summers of 1983 and 1984.

CHAPTER 2:
ENVIRONMENTAL SETTING

To understand better the Euroamerican occupation of the Laurens site, consideration must be given to the natural environment of the region as it existed when the French chose the site for a fort that became the cornerstone of the French presence in Upper Louisiana. The modern landscape of western Randolph County is significantly different from the one that existed there during the early years of the eighteenth century. The natural vegetation has been greatly modified—marshes drained and forests cleared—both to obtain lumber and to make way for crops such as wheat, maize, oats, and clover (Smith et al. 1925:2). In addition, hunting, trapping, and fishing have significantly affected local wildlife. Furthermore, flooding of the bottomlands by the Mississippi River was more severe and more frequent before the U.S. Army Corps of Engineers built levees in Randolph County during the 1930s.

Although the Laurens site is located on the floodplain of the Mississippi River, the livelihoods of the people who resided at or near the site depended upon plant, animal, and other resources that were found in a variety of nearby habitats (Figure 5). The purpose of this chapter is to describe briefly the major environmental characteristics of the region. Emphasis will be given to the resources that were probably significant for Euroamerican settlement in the region.

GEOMORPHOLOGY

The relatively flat Mississippi River floodplain extending from the mouth of the Missouri River in the north to the mouth of the Kaskaskia River in the south is referred to as the American Bottom. The southern part of the American Bottom in Monroe and Randolph counties marks the edge of the Illinoian stage of Pleistocene glaciation, which covered approximately 90% of the state. Whereas the topography of the glaciated area is flat to undulating, a rough, hilly belt of unglaciated land 3 to 16 km wide lies adjacent to the Mississippi River. The later Illinoian and Wisconsinan glacial advances did not reach this part of Illinois, but glacial meltwaters carried substantial alluvial outwash to the river

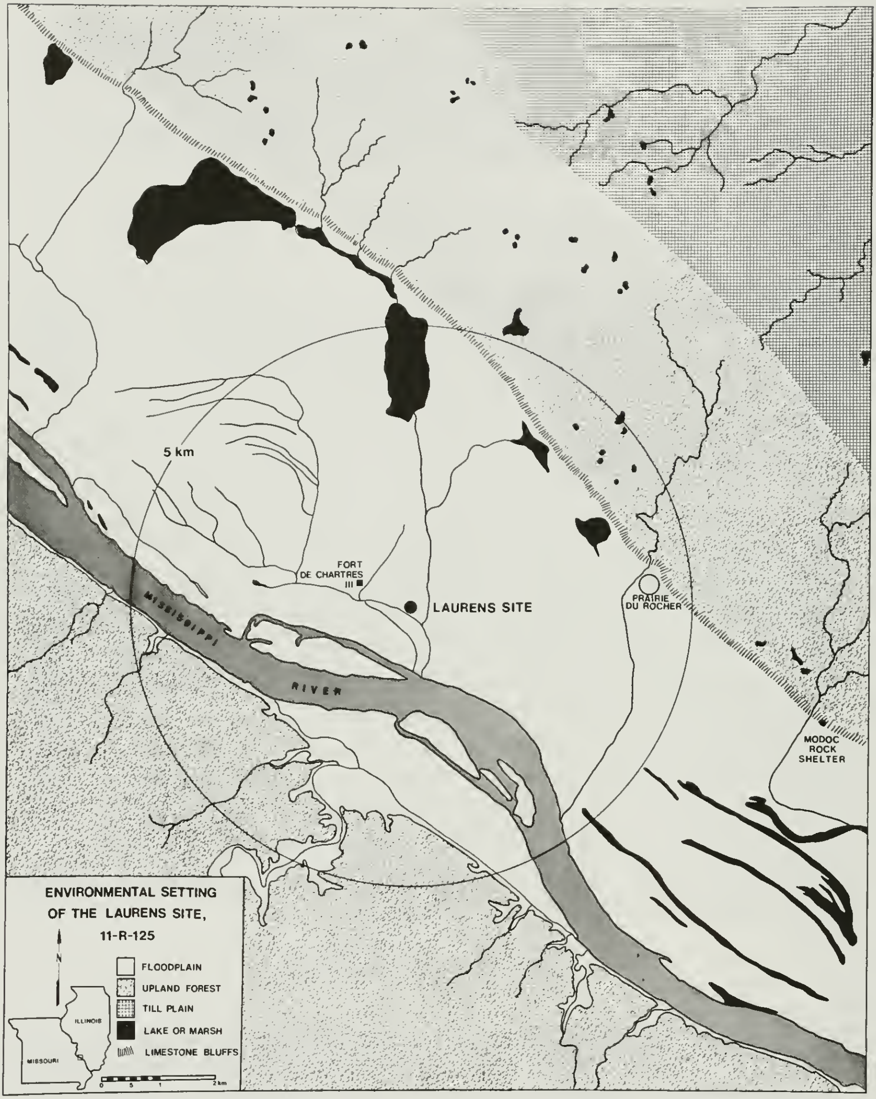

Fig. 5. Environmental setting of the Laurens site (Fort de Chartres III is the last Fort de Chartres, the stone structure partially rebuilt at the Fort de Chartres State Historic Site).

valleys. The broad floodplain in the northern part of the American Bottom was created by the scouring out of an embayment by glacial meltwaters, which left a broad, deep valley below the confluences of the Illinois and Missouri rivers with the Mississippi. The source of the wind-blown formations that cover much of the Mississippi Valley was thick outwash from Wisconsinan glaciers, and the loess that blankets the upland areas of Randolph County also originated with these later glaciers. Numerous sloughs and oxbow lakes that dot the Mississippi floodplain reflect the meandering of the river channel since the retreat of the last glaciers. Until levees were built in the 1930s, the annual floods of the Mississippi River were a persistent factor in the development of soils on the floodplain (Bareis and Porter 1984:3; Reinersten et al. 1972; Smith et al. 1925; White et al. 1984).

CLIMATE

The modern climate of Randolph County is continental. Summers are hot and humid, and winters are cold with light snowfall. The average temperature varies between 13° and 14° C, and the growing season averages approximately 200 frost-free days. The mean annual precipitation ranges from 107 to 122 cm and is distributed rather evenly throughout the year (King 1984:6; Leitner and Jackson 1981:292; Smith et al. 1925:1).

PHYSIOGRAPHY AND BIOTIC RESOURCES

Physiography in the area of the Laurens site consists principally of three sections (Reinertsen et al. 1972:4–5): (1) the till plain section, or uplands; (2) the cuesta section, or bluffs; and (3) the valley section, or floodplain. Each of these had more or less distinct communities of plant and animal life that were resources for the early settlers.

Till Plain Section

Located within 8 km to the northeast of Laurens, the till plain section represents the western margin of the Mt. Vernon Hill Country Section of the Southern Hill Plain Natural Division (Schwegman et al. 1973:21–22). The hilly and rolling topography in this area reflects bedrock that lies close to the surface, with only shallow deposits of glacial till. Southern flatwood forest was extensive in this section at the time of European settlement; it consisted of post oak, swamp white oak, blackjack oak, and pin oak (King 1984:182). Mesic prairies extended almost to the western limits of Illinoian glaciation, and wet prairies occurred in parts of the Kaskaskia River floodplain (Schwegman et al. 1973:22).

Cuesta Section

In this instance, the term "cuesta" refers to the asymmetrical ridge formed by an outcropping of thick limestone units (Ste. Genevieve formation) along the Mississippi River. This ridge has an escarpment along the western face and a gradual slope, corresponding with the Illinoian glacial boundary, on the opposite side (Reinertsen et al. 1972:5). This section corresponds to the Northern Section of the Ozark Natural Division (Schwegman et al. 1973:24–25). The prominent feature is the mature plateau and the steep bluffs along the floodplain margin. Deep weathering of the limestone beds has resulted in extensive sinkholes in the uplands and caves in the bluff escarpment. The Modoc Rock Shelter, located approximately 8 km east of the Laurens site, is a well-known example of prehistoric human habitation beneath the protective overhanging bluffs (Fowler 1959; Styles et al. 1983).

General Land Office (GLO) field survey notes used in conjunction with soil associations indicate that presettlement forests on the limestone uplands could be classified as mesic oak-hickory (Leitner and Jackson 1981:295). White oak, black oak, shellbark hickory, and pignut hickory dominated and were accompanied by flowering dogwood, sweet gum, and tulip trees. The mixture of xerophytic species (e.g., post oak and black oak) and mesophytic species (e.g., sugar maple, beech, tulip tree, and sweet gum) reveals the richness and complexity of this forest. Schwegman et al. (1973:25) remark that loess hill-prairies are common on the bluffs and contain several species unique to the section, including spurge and stiff bedstraw, which grew on exposed limestone ridges and were used by Indians as medicinal herbs (King 1984:110, 159). Leitner and Jackson (1981:298), however, did not find any mention of hill prairies along the bluffs on the GLO survey plats.

Valley Section

The valley section, or floodplain, is part of the Northern Section of the Lower Mississippi River Bottomlands Natural Division (Schwegman et al. 1973:26–27). Also called the American Bottom, the valley section originally contained prairies, marshes, and forests. Soils consist of fine-textured alluvial sediments—silt loam and sandy loam (Smith et al. 1925:22–26).

The floodplain was in perpetual flux. The Mississippi's main channel was always shifting, thus changing the locations and characteristics of oxbow lakes and sloughs. Moreover, flooding of the Mississippi River also altered the landscape in varying degrees from year to year. Because of this dynamic environment, the two floodplain forest types described by Leitner and Jackson (1981) never developed beyond lowland subclimax communities.

The most extensive forest community on the American Bottom was the Floodplain Forest. This type is characteristic of an area where floodwaters change the configuration of the shoreline markedly. Elms, ashes, hackberries, cottonwoods, and sycamores together represented over 60% of the species, while box elders and sweet gums were also common. Early land surveyors also consistently recorded pecan trees on the floodplain, although in low densities. Back from the shoreline, on firmer soils, grew black oaks, beeches, and hickories (Leitner and Jackson 1981:297–298).

The Lowland-Depressional Forest was established further away from the main channels of the river on more stable soils. Here drainage was inhibited by clay in the soil, and floodwaters became ponded for part of the year. Elms, ashes, oaks, hickories, and sweet gums constituted at least 60% of the trees in this region. Red maples and silver maples were also heavily represented. Common, but not dominant, trees included tulips, sugar maples, cottonwoods, and sycamores (Leitner and Jackson 1981:294–297).

Two small areas appear as wet prairies on the GLO survey plats. Leitner and Jackson (1981:298) suggest that these were cord grass (*Spartina pectinata*) communities bordered by sedge (*Carex* spp.). Marshes were also present on the floodplain adjacent to oxbow lakes and along certain areas of the main river channel.

Plants and Animals of Economic Importance

The diversity of natural habitats in the southern part of the American Bottom supported a large variety of plant and animal life. Human populations—prehistoric, colonial, and postcolonial—exploited these resources for a number of purposes. Plants provided food, medicines, shelter, fuel, and raw materials for tools, and the large variety of plant species meant that products could be harvested throughout the year as part of an annual cycle (White et al. 1984:30; also see King 1984). Significant nut-producing species included a variety of oaks, shagbark hickory, black walnut, pecan, butternut, and hazel. Among the various fruits were crab apples, may apples, pawpaws, persimmons, grapes, elderberries, gooseberries, raspberries, blackberries, and strawberries. Marshy areas on the floodplain sustained diverse roots and tubers—cattails, spring beauties, American lotuses, wild sweet potatoes, jack-in-the-pulpits (Indian turnips), and arrowleaves. Numerous seed-producing plants such as knotweed and pokeweed also occurred in disturbed habitats (Styles and King 1981:109; White et al. 1984:31). The fertile floodplain soils near the Laurens site also offered excellent agricultural sites so long as adequate drainage could be managed (Smith et al. 1925:23–25).

The diverse topography, numerous vegetation zones, and variety of aquatic habitats also supported abundant and varied populations of both terrestrial and aquatic animals. Forests on both uplands and bottomlands contained white-tailed deer, elk, opossum, striped skunk, raccoon, gray fox, wolf, black bear, tree squirrels, wild turkey, and eastern box turtle. Bison herds also grazed the natural prairies in Illinois from the protohistoric period until circa 1814 (Hoffmeister and Mohr 1972:205; Shay 1978). Muskrat, beaver, mink, river otter, bobcat, swamp rabbit, waterfowl, wading birds, aquatic turtles, fish, and freshwater mussels inhabited the lakes, streams, and sloughs on the floodplain (Styles et al. 1983:268; White et al. 1984:32–33). The significance of fish as food for humans living in the American Bottom is revealed by faunal remains recovered from archaeological excavations in the northern American Bottom at the Cahokia site (e.g., Kelly 1979) and nearby prehistoric sites included in the FAI-270 Project (see summary by Kelly and Cross 1984) and at the Modoc Rock Shelter (Styles et al. 1983).

Previous studies of animal remains from early historic contexts in the American Bottom include the Waterman site (Parmalee and Bogan 1980), Fort de Chartres III (Cardinal 1977; Martin and Masulis 1988), and the Cahokia Wedge site (Martin 1988).

CHAPTER 3: RESEARCH DESIGN AND EXCAVATION METHODS

PREVIOUS WORK AT THE SITE

In 1971, Margaret Kimball Brown dug a trench and a small test square at Laurens near the location of the stain revealed in the aerial photograph. She found eighteenth-century materials; three possible features were identified but not excavated (Brown 1971).

In 1980 and 1981, Weymouth and Woods (1984) conducted magnetic and soil-chemistry surveys at the site in order to test the hypothesis that Laurens was the location of the first Fort de Chartres. Weymouth used a magnetometer for the magnetic survey, and Woods analyzed core soil samples for pH and for relative concentrations of phosphates, calcium, magnesium, potassium, iron, zinc, and copper. They found and mapped a series of anomalies, some of which were aligned in rows corresponding to the north and south edges of the stain shown in the 1928 aerial photograph, while others appeared between those rows and at other locations (Figure 6). They concluded that "the correlation between the chemical and magnetic anomalies, together with the orientation and dimensions of the rows of anomalies, support the hypothesis that these are wall lines and a possible bastion of the first Fort de Chartres and that these features were outlined in the 1928 aerial photo" (Weymouth and Woods 1984:27–28).

RESEARCH OBJECTIVES

The objectives of the field work described in this report were (1) to determine the nature of the subsurface anomalies previously detected and mapped by Weymouth and Woods; (2) to seek subsurface evidence of the rectangular stain appearing in the 1928 aerial photograph; and (3) to determine if Irvin Peithmann was correct in identifying Laurens as the first Fort de Chartres, built by Boisbriant in 1719–1720.

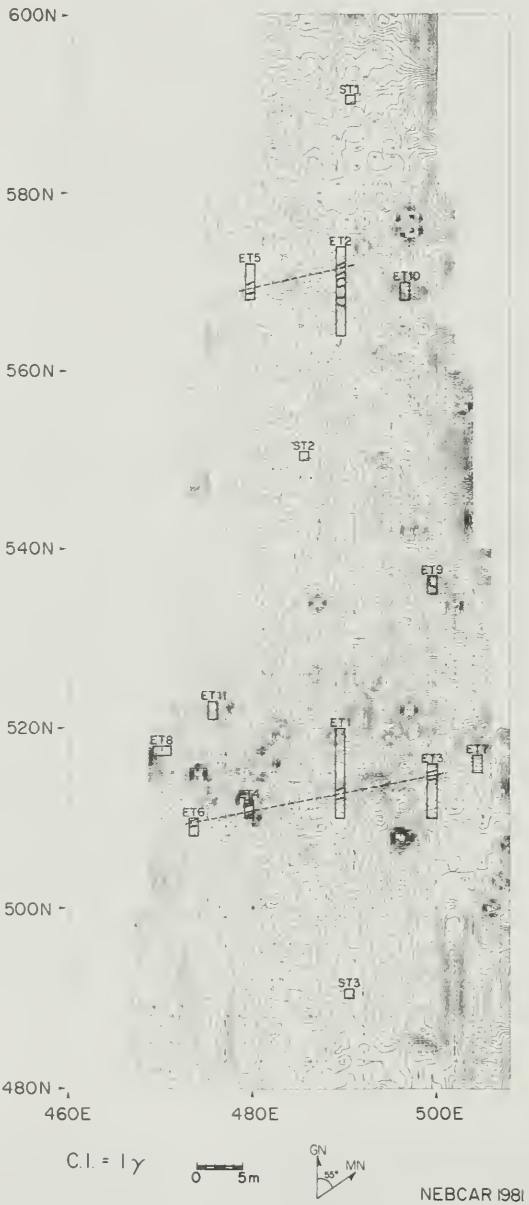

Fig. 6. Magnetic map of the Laurens site, made in 1981 by John Weymouth, showing subsurface anomalies, and locations of tests and features of the 1983 archaeological explorations.

The project was deliberately limited in scope for several reasons. For one, prior to subsurface testing, there was no definite evidence that any archaeological features or artifacts were associated with the anomalies detected by Weymouth and Woods or the stain on the 1928 aerial photograph, nor was there much evidence as to the age or cultural affiliations of any archaeological remains at the site.

Moreover, archaeological work of any kind—survey, testing, mitigation, or small specific research problems—is always constrained by limitations of funding and time. Indeed, these two factors constitute the basic boundaries within which research projects must be conceived and carried out (Emerson and Jackson 1982:8). Given the modest level of funding available ($12,000 from Illinois State University and $1,500 from the Illinois Historic Preservation Office), the project was limited to the objectives outlined above. Larger research issues—ecosystems, survival strategies, cultural adaptations, and so forth—could not be addressed at this initial stage of archaeological data collecting.

However, in 1984 Terrance Martin of the Illinois State Museum added a further dimension to the project. Martin, a zooarchaeologist, agreed to identify and analyze the faunal remains collected during the excavations. This allowed expansion of the objectives to include an analysis of animal-based subsistence at the site and how its inhabitants exploited the animal resources available in the region.

This investigation of the Laurens site, although limited, is of special significance for two reasons: (1) of the succession of Forts de Chartres built between 1719 and the 1750s, only one, the last, has been located and identified; and (2) by common consensus, all of these fort sites, if they can be located, have rich potential for providing data on the French colonial presence in the Mississippi Valley.

RESEARCH DESIGN

Before beginning fieldwork, we developed a conceptual model of the kinds of archaeological remains that would be expected if, indeed, Laurens is the location of the first Fort de Chartres.

The most important architectural feature of the model was the ditch in which the palisade forming the fort's curtain wall would have been erected. Such a ditch should be deep enough (1 to 2 m) for seating a palisade 3 to 6 m tall and would probably contain molds of individual pales in the bottom of the ditch. If enough of such a palisade ditch survived, it should define the perimeter of a fort having appropriate dimensions for its time and place (i.e., 30 to 70 m across). Inside the fort might well be the remains of a powder magazine, a smithy, living quarters for officers and troops, and storage buildings.

Associated with the structural remains should be artifacts that one would expect early eighteenth-century French soldiers and colonists to possess: flintlock muskets, faïence pottery, free-blown wine and case bottles, wrought-iron nails, and clasp knives—all of types that have been found at other French colonial sites of the late seventeenth and early eighteenth centuries (e.g., Louisbourg in Nova Scotia, Fort Beauséjour in New Brunswick, Fort Michilimackinac in Michigan, and Fort Ouiatenon in Indiana).

FIELD PROCEDURES AND RESULTS

The fieldwork was conducted over 26 days in three separate periods in 1983 and 1984: 7–17 July 1983, 10–20 August 1984, and 11–14 October 1984. The crew consisted of two to eight volunteers directed by Jelks. They carried out a limited surface examination of the site, and excavated a series of trenches and test squares. Placement of excavation units was largely determined by results of Weymouth's and Woods' surveys.

Three 1x1-m strata-test units were excavated to determine the natural soil profile at the site, and then 23 exploratory trenches (E.T.s) were excavated. These were 0.5–1.0 m wide and 2–8 m long, numbered in sequence in the order that they were dug. For those E.T.s more than 2 m long, each 2-m section was also assigned a letter designation (e.g., E.T. 2a, E.T. 2b, etc.). Artifacts were collected separately from each 2-m section of each E.T. The plowzone was completely removed as a unit in each section and the trench floor cleaned, usually at a level of about 30 cm below surface. If the trench floor at that level consisted entirely of culturally sterile soil, the section was not dug any deeper. If artifacts or disturbances showed in the trench floor, however, excavations were continued in 10-cm levels, except in several sections where time did not permit further work. Individual features were also identified within some of the E.T.s. These were numbered sequentially as they were discovered. Because of time constraints, none of the features were completely excavated (all extended beyond the limits of the E.T.s in which they were discovered). Details of the excavation of individual features are given in the next chapter.

Recovery techniques included dry-screening all subplowzone sediment through 6.4-mm (0.25-inch) mesh hardware cloth. In addition, sediment samples totaling 180.7 l were collected during the 1984 field season and processed by water-screening through 6.4-mm (0.25-inch) and 1.6-mm (0.063-inch) mesh screen. The water-screened sediment samples were collected primarily for the purpose of checking the representativeness of the faunal assemblage obtained by hand troweling and dry-screening.

Surface Examination

Since the site occupies the floodplain of the Mississippi River, there is little topographic relief. A county road, which connects Prairie du Rocher with the Fort de Chartres State Historic Site, crosses the east side of the site, while on its west side stands a levee erected in the 1930s (Figure 7). In 1928, when the aerial photograph was taken revealing the anomalous rectangular stain, neither the road nor the levee was present.

In 1983 and 1984, the area between the road and the levee was heavily overgrown in weeds that made it impossible to see any artifacts on the ground surface. However, the excavations in this area produced substantial quantities of eighteenth-century artifacts; if the area were plowed, a conspicuous artifact scatter could be detected and mapped. Peithmann, in fact, collected a number of surface artifacts in the vicinity while it was being farmed, although he did not record precisely where.

In 1984, a limited surface investigation was conducted in a freshly cultivated bean field across the county road from the excavations. Eighteenth-century artifacts, pieces of limestone, bone fragments, and other cultural debris were observed in a zone running several meters east of the road. Because one edge of the stain in the aerial photo was in the area now occupied by the levee, part of the site almost certainly extends beneath the levee. There is a distinct possibility that some features may be buried there and preserved well enough to warrant archaeological investigation. Furthermore, there may be some features on the river side of the levee. As discussed below, tests south of the south palisade ditch revealed no features save a small ditch (Feature 18) that was probably part of a fence line. No work was done north of the main concentration of features (in the direction of the stone fort), and therefore the northern extent of the site is uncertain.

1983 Excavations

Fieldwork began with excavation of the three strata-test units. These were placed in areas where Weymouth's magnetic map indicated no subsurface disturbances (Figures 6 and 7). The three units all re-

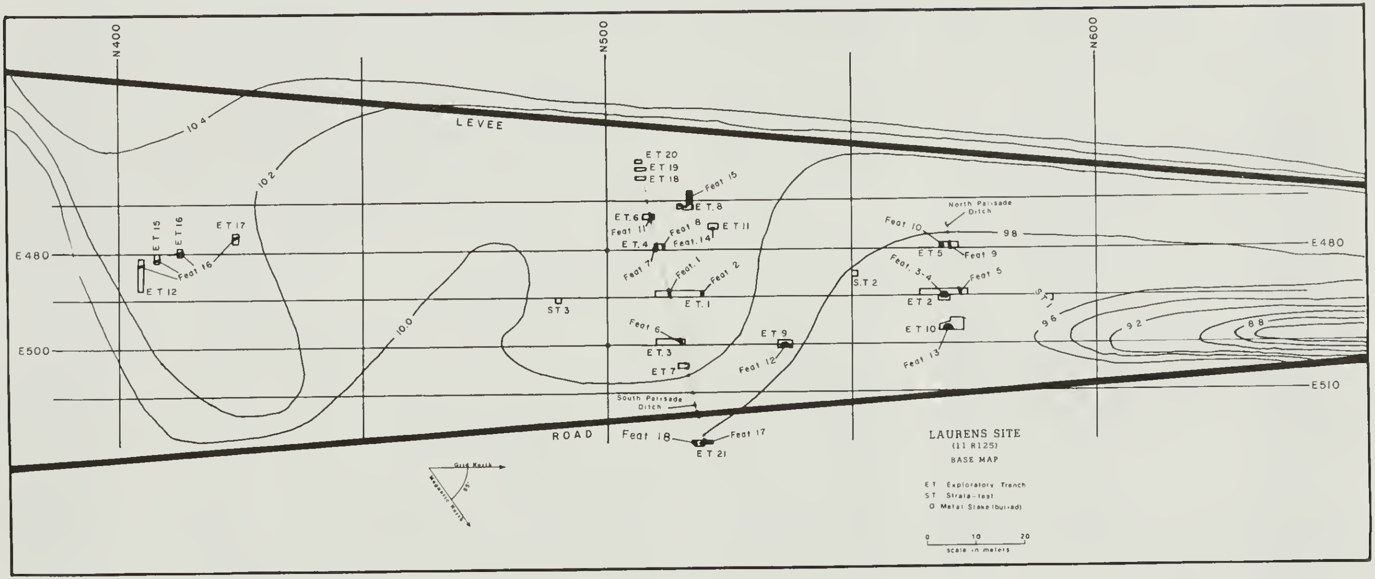

Fig. 7. Site base map showing all excavation units and features.

vealed a plowzone 25 to 30 cm thick. Below this was the lower part of a typical A horizon over the B and C horizons of a normal soil profile. The C horizon was a light, yellowish, compact soil that contrasted sharply in color and texture with the darker, less compact A and B horizons.

When work began in 1983, John Weymouth was present at the site. Locations for initial excavations were selected using data from the magnetometer and chemical soil tests (Weymouth and Woods 1984), and Weymouth confidently predicted that the first two E.T.s would intercept the presumed fort's north and south palisade ditches. Weymouth was correct: in a short time two ditches were located, which, after profiling, appeared to be palisade ditches. Next, the probable alignments of the ditches were projected from the first two fixes, and additional E.T.s were excavated to establish the ditches' linear trends.

Profiles were then cut through both the north and south ditches at regular intervals. The original ditches were approximately 0.9 m deep and tapered from a width of about 0.9 m at ground level to 0.4 m at the bottom. Dark stains in the bottom of the north ditch suggested that a palisade had once stood in it and that this palisade had been constructed of pales averaging 20 cm in diameter, set vertically side by side, in a single row.

Eleven E.T.s (1–11) were excavated in 1983 (Figure 7). Test trenches between the north and south ditches (presumably inside the perimeter of the fort) intersected nine features (2, 3, 4, 8, 10, 12, 13, 14, and 15; Figure 7). As noted previously, all of these features could not be completely excavated; however, a sufficient number of artifacts in and around them were collected to demonstrate that all except one (Feature 2) were almost certainly of eighteenth-century French origin. Feature 2 contained ceramics and other artifacts dating from the early nineteenth century, most of them of English manufacture. Materials from the palisade ditches and other French features included faïence and lead-glazed ceramic sherds, gun parts (including an early form of socket bayonet), hand-forged nails, bottle fragments, and a large number of garbage bones.

1984 Excavations

In June 1984, John Weymouth returned to the site and made a second magnetic survey (Figure 8) south of his first survey. The purpose of this second survey was to search for anomalies associated with the village of Chartres which, according to historical documents, developed near Fort de Chartres during the 1720s (Weymouth 1984). Several

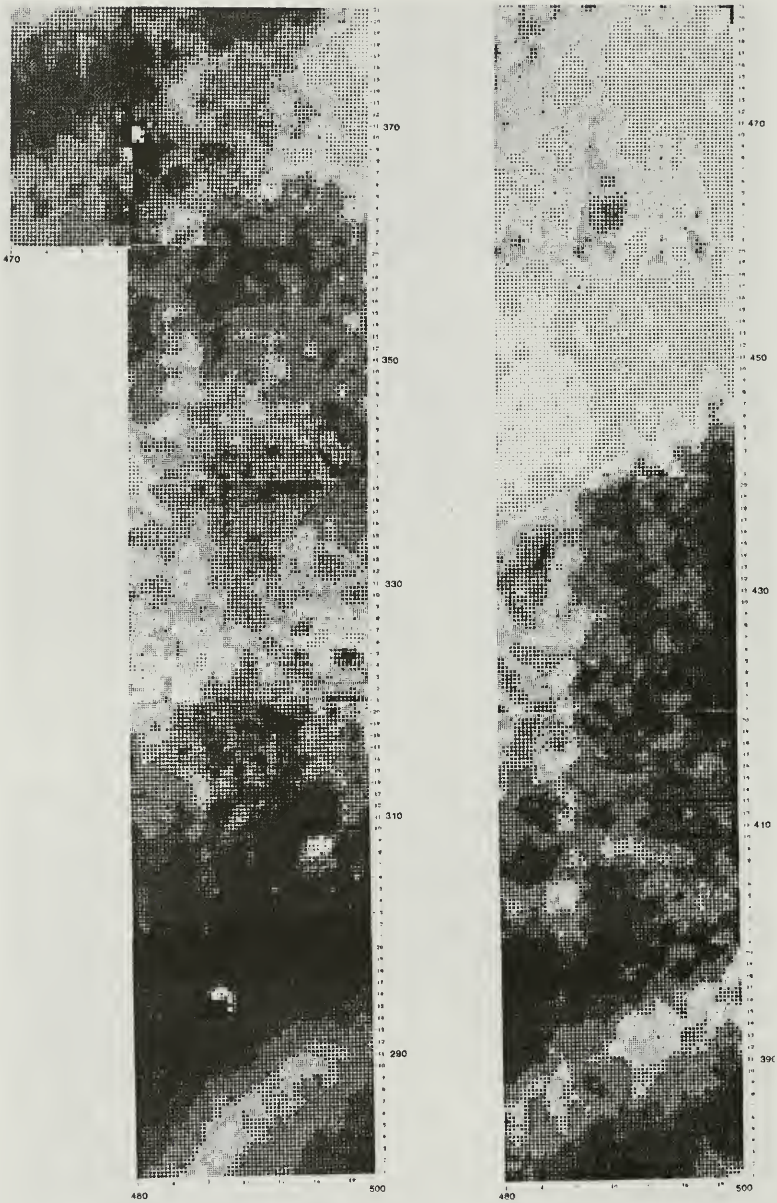

Fig. 8. Magnetic map of the area immediately south of the Laurens site, made in 1984.

magnetic anomalies similar to those found in 1981 between the palisade ditches were located. There also appeared to be a corridor averaging about 5 m wide running approximately north-south for a distance of at least 160 m towards the south palisade ditch (Weymouth 1984). Weymouth believed that this may have been a road to the fort.

In August and October 1984, twelve more E.T.s (12–23) were excavated and Features 1, 3, 4, 12, 13, and 15 were further investigated. On Weymouth's advice, exploratory trenches were placed across his major anomalies in pursuit of archaeological remains, including the possible roadbed. Disappointingly, most of these anomalies turned out to be modern. No ruts or other clear-cut evidence of a roadway appeared, although such evidence could well have been obliterated by continuous plowing over the centuries.

Exploratory Trenches 13 and 14, dug to determine the nature of magnetic anomalies detected by Weymouth, were well south of the palisaded area (the coordinates at their southeast corners were, respectively, N293E489 and N372E489). Each contained modern metal scraps (including wire nails at the former and barbed wire at the latter), which obviously were the anomalies sensed by the magnetometer. These two E.T.s are considered beyond the limits of the Laurens site proper and therefore do not appear on the site base map shown in Figure 7. Weymouth's efforts in 1984 to locate additional eighteenth-century features with a magnetometer were therefore fruitless—a sharp contrast to the successful results of his previous magnetic survey.

However, the 1984 excavations did turn up three new features. The first of these (Feature 16), located south of the south palisade ditch and therefore well outside the fort's curtain, was a long ditch with postmolds in the bottom; this was probably associated with a property-line fence outside the perimeter of the fort. A second feature was a ditch (Feature 17), tentatively identified as part of the fort's south palisade ditch. The third was a row of postmolds (Feature 18) adjacent to Feature 17.

In the hope of finding a corner of the palisade ditch, three E.T.s (18, 19, and 20) were placed a few meters inside the base of the levee in line with the south palisade ditch, projected westward. They exposed an area of general disturbance containing a great deal of eighteenth-century cultural material. Unfortunately, neither the time nor the funds necessary to determine the precise limits or the character of this rich area were available. The limited work done, however, does indicate that a thorough exploration of this area would almost certainly provide information of great importance for interpreting the Laurens site as a whole.

CHAPTER 4: FEATURE AND ARTIFACT DESCRIPTIONS

During field work, 18 soil disturbances were designated features. Features 1 through 15 were located in 1983, and 16 through 18 in 1984. Ultimately it became obvious that four of the features (1, 6, 7, and 11) were all sections of the same ditch, running roughly east-west, that was identified as the south palisade ditch of an eighteenth-century French fort (Figure 7). Feature 17 was tentatively identified as a section of the same ditch. Features 5 and 9 were sections of another ditch, parallel to the first one, which was interpreted as the north palisade ditch of the same fort.

Each of the other 11 features clearly was of cultural origin, although none were completely excavated, and some features were left entirely unexcavated. A soil corer 1.8 cm in diameter was used to determine the depth of fill within some of the unexcavated features, and their plan views as they appeared in the cleaned trench floors just below the plowzone were recorded. Detailed descriptions of the features, their excavation, and their contents are provided below.

NORTH PALISADE DITCH

Features 5 and 9 established the cross-sectional dimensions and orientation of the north palisade ditch (Figures 7 and 9). A 1-m-long section of this ditch was completely excavated in E.T. 2 (Feature 5) and two profiles were recorded. The fill below the plowzone was excavated in six 10-cm levels. Fifty meters to the west, another 1-m-long section of the ditch was exposed (Feature 9). The fill of Feature 9 was not excavated; its depth was determined by probing with a soil corer.

Features 5 and 9 revealed that the north palisade ditch ran almost due east and west across the northern part of the area tested. The ground surface from which it was dug probably lay slightly below the level of the modern surface, as there was evidence in several of the exploratory trenches of silting after the fort had been abandoned. That plowing had disrupted the upper part of the ditch fill at some places was apparent from the presence in the plowzone above Feature 5 of trash that had been ripped up by the plow.

The ditch was 78 to 100 cm wide at a depth of 30 cm below the surface. Its bottom was 80 to 105 cm below surface. The two profiles at Feature 5 show that the walls tapered downward slightly to a depth of 80 to 90 cm, below which only the north side of the ditch extended deeper, to approximately 100 cm below surface. This left a narrow subtrench along the north side of the ditch and a bench along the south side. At the deepest level of the subtrench were four distinct postmolds (Figure 10) that patently marked the locations of individual pales in the palisade line. These were visible as dark intrusions into the clay subsoil of the trench floor. The postmolds, from 15 to 30 cm in diameter, extended about 10 cm into the clay subsoil.

Entirely within the fill of the primary ditch at Feature 5 was a secondary ditch containing garbage bones, discarded artifacts, and other domestic trash. The fill of this secondary ditch contrasted with the sterile clay that filled the primary ditch on either side.

The sequence of events that produced these distinctive archaeological remains is reconstructed as follows:

1. A trench averaging a little less than a meter wide at the top was dug to a depth of approximately 85 cm along the north perimeter of the site where the palisade was to be erected.
2. One side of the trench was dug down about another 20 cm.
3. A row of tree-trunk pales was placed in the trench to form a palisade-type curtain. Some of the pales were tamped down as they were set in place in order to seat their bases firmly in the clay of the trench floor (hence the postmolds at Feature 5).
4. The trench was packed with clayey soil to hold the palisade in place.
5. At a later time the pales were removed for reuse (perhaps as material for construction or for firewood), leaving an open ditch (the secondary ditch showing in the profiles at Feature 5) that was narrower than the original trench.
6. Domestic trash was discarded in this ditch until it became filled.
7. A layer of silt was deposited over part or all of the fort site. This was deep enough at Feature 9 to contain the entire plowzone created by subsequent conversion of the site to farming; at Feature 5 it must have been thinner, as the plow bit below the silt and truncated the upper part of the ditch fill.

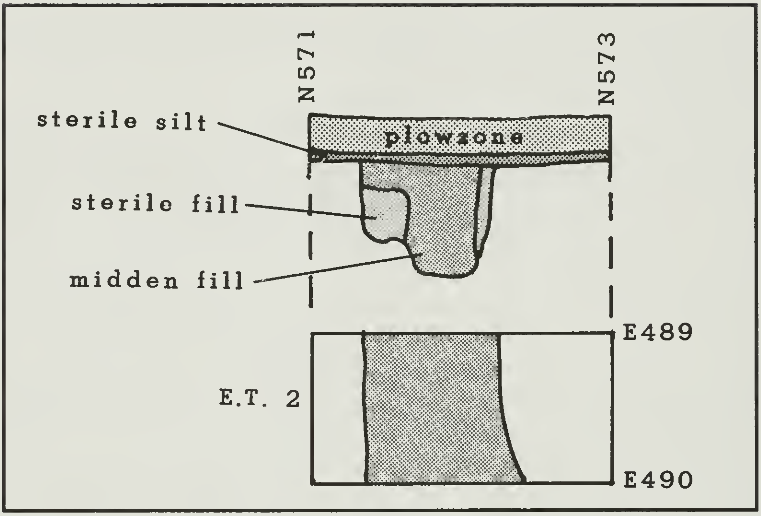

Fig. 9. Plan and profile of north palisade ditch at Feature 5.

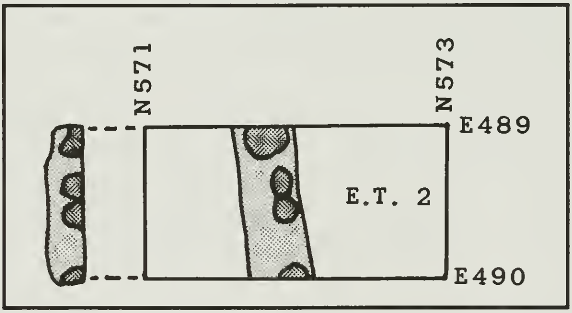

Fig. 10. Postmolds in bottom of north palisade ditch at Feature 5.

Feature 5 Artifacts

Ceramics. Of the seven faïence sherds, all are plain save a tiny one from the 70–80-cm level, on which there is a bit of blue and brick red polychrome decoration. Two sherds are a common eighteenth-century French earthenware with a bright green glaze over a thin white slip. A sherd of lead-glazed, coarse earthenware and two brick fragments complete the inventory of ceramics.

Glass (Figures 24a and 33g). There are 18 pieces of wine bottles made of the usual pale green glass, seven sherds of common blue-green case bottles, and six fragments of light blue, thin-walled vials. Three pieces of flat, clear glass are too small for further identification. A section of the foot from a clear wine glass has a thickened edge, and three small sherds of curved, clear glass may also have come from wine glasses. A simple, white, necklace-sized, drawn glass bead is 11 mm long and 7 mm in diameter.

Metal (Figures 29d, 29g, and 30d). What appears to be the tip of an iron scythe has one sharp edge and a thick ridge along the opposite edge. Thirteen wrought-iron nails, all between 3 and 10 cm long, came from the ditch fill.

Shell. A mother-of-pearl disc with a very large conoidal hole in the center has a carved geometric design on its face. Perhaps this was used as a button, but if so the method of attaching it is not clear.

Artifacts from Plowzone above Feature 5

The plowzone above Feature 5 yielded a number of artifacts, some of which probably were turned up from the feature fill by the plow. There are five faïence sherds, including a plain rim section from a small jar and a tiny rim sherd with several narrow, blue, horizontal lines on the rim and a red line on the lip. The other pieces of faïence are plain. Other ceramics include four sherds of lead-glazed earthenware, a rim sherd of white-slipped, green-glazed French common earthenware, and two brick fragments.

Glass objects from the plowzone are 13 pieces of green wine bottles; three sherds of blue-green case bottles; a small section of a light blue vial; a thick, deep blue bottle fragment, and two sherds of thin, curved, clear glass, possibly from wine glasses. The only iron artifacts are seven wrought nails. A spall-type gunflint made of honey-colored flint and a chert core complete the list.

Artifacts from Plowzone above Features 9 and 10

Exploratory Trench 5a, which overlay Features 9 and 10, produced a green wine-bottle sherd and three wrought-iron nails.

SOUTH PALISADE DITCH

In 1983, four 1-m-long sections of the south palisade ditch were exposed: Feature 1 (in E.T. 1), Feature 6 (in E.T. 3), Feature 7 (in E.T. 4), and Feature 11 (in E.T. 6) (Figure 7). The Feature 1 ditch fill below the plowzone was excavated in 10-cm levels. At Features 7 and 11, only the first 10-cm level below the plowzone was excavated; the rest of the fill was left in place. At Feature 6 the plowzone was removed to expose the ditch, but none of the fill was removed. A soil corer was used to determine the depth of the ditch at Feature 6. In August 1984, the profiles of Feature 1 were re-exposed, and soil samples from the feature's fill were taken for water-screening.

The dimensions of the south palisade ditch were similar to those of the north palisade ditch. Width at the top, just beneath the plowzone, was 60 to 103 cm; depth below surface was between 80 and 90 cm. The south ditch ran parallel to the north one, the two being 57.8 m apart. Thus the north-south width of the fort was almost precisely one arpent, a French unit of measure equal to about 58.5 m.

The profiles at Feature 1 (Figures 11 and 12) corresponded in many respects to the profiles of the north palisade ditch. A secondary ditch containing trash, encompassed by compact sterile fill, occupied the southern part of the south ditch. However, there was no narrow subtrench like the one in the north palisade ditch. Despite careful cleaning and inspection, no postmolds were observed in the floor of the south palisade ditch.

The Feature 1 profiles support the same inferred sequence of activities that were described earlier to explain the profiles of the north palisade ditch. That is, a wooden palisade was erected in a trench; the pales were later removed, leaving an open ditch; domestic trash was dumped into this ditch; and subsequent repeated plowing disturbed the upper part of the ditch fill.

Palisade ditches have been recorded archaeologically at three other eighteenth-century French sites in the Midwest: Fort Massac on the Ohio River in Massac County, Illinois, built in 1757; Fort Ouiatenon established on the Wabash River near Lafayette, Indiana, in 1717; and Fort Michilimackinac in Emmet County, Michigan, built in 1715. All had approximately the same dimensions as the palisade ditches at the

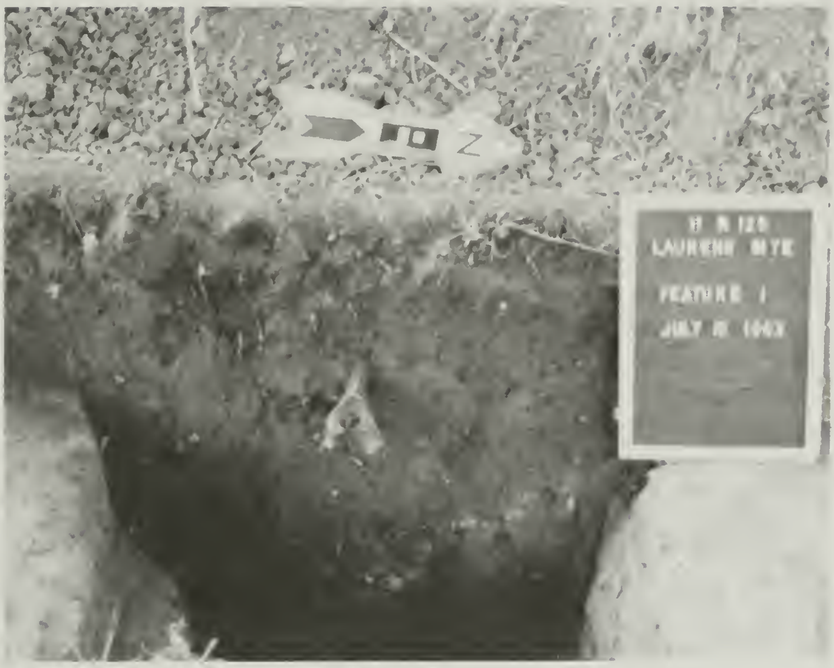

Fig. 11. Profile of south palisade ditch at Feature 1.

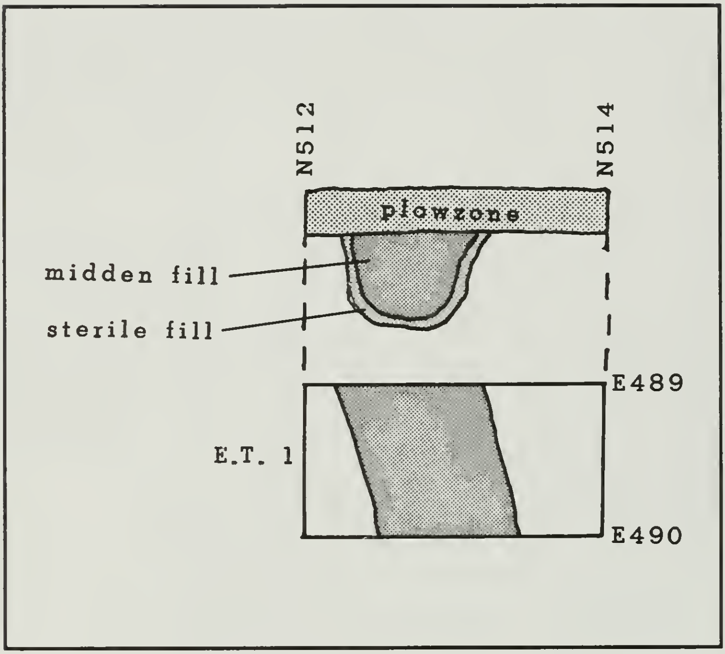

Fig. 12. Plan and profile of south palisade ditch at Feature 1.

Laurens site. Fort Massac's ditch was about 85 cm wide and 1 m deep at one spot (Bailey 1966:profile drawing following p. 32). The early ditch at Fort Ouiatenon varied between 55 and 100 cm wide and was 55 to 95 cm deep where sectioned at several locations (Tordoff 1983:152–160). At Fort Michilimackinac, the early palisade ditch was 49 to 68 cm wide and 123 to 220 cm deep (Stone 1974:313).

Feature 1 Artifacts

Ceramics (Figure 23c). Two sherds, both from 60–70 cm below surface, comprise the only European ceramics from the fill of Feature 1. One is a small 6-mm-thick piece of faïence with a yellowish body and a bright white glaze. The other is a body fragment of an earthenware vessel with a pale reddish paste and an interior, amber, lead glaze. Three shell-tempered, plain sherds from Feature 1 are Indian-made.

Glass (Figures 24c, 25b, 33c, and 33e). The fill of Feature 1 produced 65 sherds of green-glass wine bottles, including a complete neck with a string rim. They all could have come from either French or English bottles dating between the late seventeenth and early eighteenth centuries. Nineteen fragments from square case bottles, all of blue-green glass, were found in the fill of Feature 1.

A small piece of thin, clear, flat glass has one straight side that is beveled from both faces to produce a sharp edge. The purpose of this edge treatment is unknown. Three other small fragments of flat, clear glass may be from a small mirror.

A heavily patinated sherd of pale amber glass is from a flask or bottle that was shaped in a design mold, then enlarged by freehand blowing. It bears part of an elaborate decoration on its exterior, including what may be the letter “M” or “W.”

Two glass beads were found in Feature 1: a drawn, clear/white bead (6 mm long by 5 mm in diameter) and a clear, drawn bead with thin, white, longitudinal stripes embedded in its body. The latter measures 8 mm in both length and diameter.

Metal (Figures 28b, 29f, 31g, 31h, and 32c). Thirty-five wrought-iron nails from the fill of Feature 1 range in length from about 3 to about 10 cm. An iron loop is part of a swivel for a gun sling. Two pieces of flat iron are too fragmentary for further identification. A short length of iron wire may be part of a kettle bail.

Half of a plain brass buckle with an iron tongue is 43 mm wide. Two buttons were found in Feature 1. One is a military type made of heavy cast brass with a sturdy U-shaped shank brazed to the back. The face is convex and has a single groove around the border. It is 20 mm in diameter. The other button consists of the obverse half of a compound, hollow type and is made of thin sheet brass. It has a plain face and is 16 mm in diameter. A brass straight pin 26.5 mm long and about 0.5 mm in diameter has a 1.0-mm spherical head crimped onto its proximal end.

A lead musket ball has a diameter of 13 mm (.50 caliber). Two pieces of scrap lead came from the feature fill.

Bone (Figure 32m). A fragment of a bone comb is 47 mm wide and 2 mm thick; another less complete fragment probably came from the same comb. The teeth, in two rows on opposite sides of the comb, average about 15 mm long. A broken gaming die made from a mammal long bone appears originally to have had four numbered sides. Parts of two sides remain: one that had six pips and one that had five pips. The only other bone artifact from Feature 1 is a small, flat object with a biconical perforation through it. It is rounded at one end and has been cut straight across at the other end. The biconical hole and the general appearance suggest that this was made by an Indian.

Stone (Figure 32h-j). The fill of Feature 1 produced four gunflints. Three are of the spall type, made of honey-colored flint; the fourth is a small, rectangular specimen made of a gray chert, probably of Indian manufacture.

A chert flake with a striking platform and a bulb of percussion appears to have been produced during the knapping of a stone tool. It was unearthed in the 30–40-cm level.

Artifacts from Plowzone above Feature 1

Five ceramic sherds collected from the plowzone above Feature 1 probably came from the feature's fill, although this is not certain. Two are plain faïence body sherds, one is a rim sherd from an elaborately decorated blue-on-white faïence platter, one is a body sherd of Hispanic majolica (probably Puebla Blue-on-White), and the other is a thin sherd of brown stoneware.

One sherd from a blue-green case bottle and 17 sherds from green-glass wine bottles came from the plowzone above Feature 1, along with 13 wrought-iron nails and two pieces of scrap lead.

Artifacts from the Plowzone above Feature 6 (Figures 22b, 23d, and 29c)

Feature 6 was not excavated. However, the plowzone overlying it produced several artifacts, some of which surely were drawn out of the feature by plowing.

One of the five ceramic sherds from this location is from a small preserving jar that was 54 mm tall and about 90–100 mm in diameter. It has a tin glaze on the interior surface and also on the exterior, except for the base. The body is pale yellowish brown; the glaze has a faint greenish cast and a mat finish. The cultural affinities of this sherd are uncertain.

Another earthenware sherd, which has a small perforation in it, possesses a reddish brown body with dark red streaks running through it and a bright green glaze applied over a very thin white slip. This is typical of eighteenth-century French utility pottery, specimens of which occur commonly at French sites of this period in the United States and Canada.

The only stoneware sherd from this location has a grayish body and a brown, salt-glazed surface. A rim sherd with a flange and a channel just below the lip, it probably is from a vessel that was used for food storage.

A tiny sherd with dark brown glaze and reddish brown body is typical of Rockingham and Whieldon wares. The fifth sherd has a light yellowish body, a clear glaze, and a small patch of blue decoration that appears to have been applied by the transfer-printing process.

Ten sherds of green wine bottles and five sherds of blue-green case bottles comprise the glass from the plowzone over Feature 6. The only metal artifacts from this location are five wrought-iron nails, all between 5 and 10 cm long, and the distal end of a knife blade.

Feature 7 Artifacts (Figure 26a)

At this section of the south palisade ditch, only one 10-cm level of ditch fill, beginning 30 cm below the surface at the bottom of the plowzone, was excavated. Two artifacts were found: a large piece of a green-glass wine bottle and part of a wrought-iron nail.

Artifacts from Plowzone above Feature 7 (Figure 23b)

From this disturbed zone came 13 wine-bottle sherds of green glass, three medium-sized wrought-iron nails, and a handle from an Albany-slipped earthenware vessel.

Feature 11 Artifacts

After removing the plowzone at E.T. 6, a single 10-cm level of ditch fill was excavated in Feature 11. The only artifacts found were two small pieces of pale blue glass that appear to have come from the same small vial.

Artifacts from Plowzone above Feature 11 (Figures 21i, 24b, and 31a-b)

The plowzone overlying Feature 11 proved to be relatively rich in artifacts, most of which probably were dragged out of the feature's upper level in plowing. There are four small, plain faïence sherds; one large faïence sherd decorated with an elaborate blue floral design; a sherd of lead-glazed earthenware; 10 wrought-iron nails; seven fragments from green wine bottles; and four sherds from blue-green case bottles. A piece of a clear wine-glass foot with a folded edge and two scraps of unidentified clear glass were collected, plus two buttons and two brick fragments. One of the buttons consists of the obverse half of a hollow compound form made of thin sheet brass. This has a plain face and is identical to a button found in Feature 1 except that it is larger, measuring 23 mm in diameter. The one from Feature 1 has a diameter of 16 mm. The second button is a simple disc of bone with a single hole in the center. It is 11 mm in diameter and 2 mm thick.

FEATURE 2

Once the plowzone was removed, this feature was clearly visible in the floor of E.T.1e at a depth of 30 cm below surface (Figure 13). Its south edge trended sinuously in a generally east-west direction across the trench; to the north, east, and west it continued beyond the trench into unexcavated territory, so its horizontal boundaries were not identified. That part of the feature's fill lying within the E.T. was excavated completely in 10-cm levels.

Feature 2 was a pit of undetermined size that had been filled with midden soil containing a large quantity of limestone fragments and

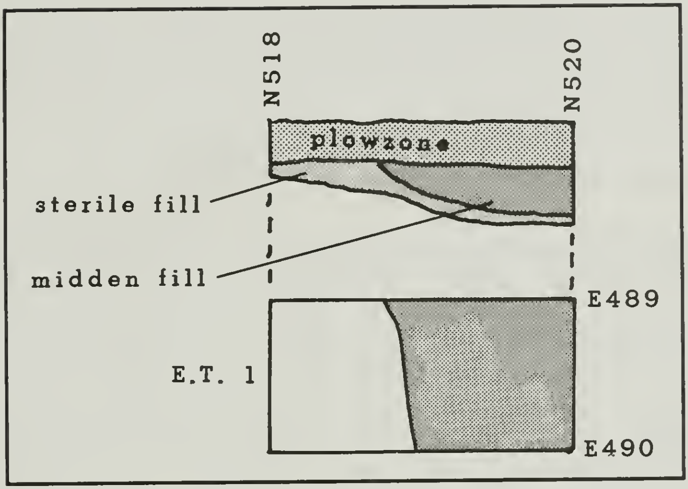

Fig. 13. Plan and profile of Feature 2.

other trash. Several lenses of ash and charcoal were observed. The south side of the pit curved downward from the upper edge toward the bottom, so that in profile the portion that was excavated suggested an overall basin shape.

Feature 2 Artifacts

Ceramics (Figure 22d-f and h-i). Except for a tiny sherd of Hispanic majolica of the Puebla-Blue-on-White type (Figure 22d), all of the diagnostic ceramic sherds from Feature 2 are white-paste, clear-glazed earthenware which fit the generic category called pearlware and date from the first half of the nineteenth century. Seven have blue shell-edge decorations, four have hand-painted polychrome designs, one has a transfer-printed floral decoration, and 20 are plain. The only other sherd is from a brown, salt-glazed, stoneware vessel. One heavily burned clay marble also came from the feature.

Glass (Figures 25a and 33h). There are 12 green sherds from wine bottles, 15 blue-green case-bottle sherds, nine wine-colored bottle sherds, two pale blue vial sherds, and five fragments of flat, bluish glass. Two pieces of clear glass may be from bottles or wine glasses.

Three glass beads came from Feature 2: a drawn, clear bead with thin, longitudinal, embedded, white stripes and three deep blue, simple, drawn beads. The striped bead, which is almost identical to a specimen from Feature 1, is 6 mm long and 8 mm in diameter. The blue beads are 11 mm long by 7.5 mm in diameter, 9 mm long by 7 mm in diameter, and 8 mm long by 8 mm in diameter.

Metal (Figures 28a, 30c, 31c, 31e, 31j, 32b, and 33a). The iron artifacts consist of 36 wrought-iron nails, four machine-cut nails, a piece of a clasp-knife blade, a battered wedge, a 41-mm-long wood screw, six scraps of sheet iron, and a fastener (11 mm wide and 5 mm thick) like those commonly used on clothing. One machine-cut nail is 80 mm long; the others are small fragments. The wrought-iron nails are all between 2 and 11 mm long. The wedge is 60 mm wide, 91 mm long, and 29 mm thick at the butt.

Feature 2 produced five brass buttons. Three are obverse halves of hollow, compound buttons with plain faces—the same type found in Feature 1 and in the plowzone above Feature 11. Two of these, both from 30–40 cm below surface, have diameters of 16 mm; the other, from the 40–50-cm level, has a diameter of 21 mm. A cast-brass button 17 mm in diameter has a plain, convex face with a shallow groove around the border and a U-shaped attachment shank brazed to the back. This military type is similar to buttons from other features.

Completing the list is a small, cast-brass button with an attachment shank that was cast as an integral part of the button, then was perforated. Twelve millimeters in diameter, this button has a geometric design on its face that was formed by the casting mold.

A segment of rim from a brass kettle has a piece of heavy iron wire around which the sheet brass of the kettle's body was wrapped to impart rigidity to the rim.

Two scraps of sheet brass, five small pieces of scrap lead, two musket balls—14 and 16 mm in diameter—and a lead goose shot 6.5 mm in diameter also came from Feature 2.

A small lead seal has the word "CENTAVO" on one face and a sunburst on the other. It probably dates after 1763, when the west bank of the Mississippi came under Spanish administration.

Miscellaneous (Figures 31f, 31i, 31k, and 32g). Two spall-type gunflints are of honey-colored flint. Three disc-shaped bone buttons are 23 mm wide and 3 mm thick, 19 mm wide and 3 mm thick, and 15.5 mm wide and 2 mm thick.

Artifacts from Plowzone above Feature 2 (Figure 22g)

From the plowzone came six white-paste earthenware sherds (one hand painted, three transfer printed, and one plain), a sherd of salt-glazed stoneware, six green-glass wine-bottle sherds, three miscellaneous glass sherds, two glass beads, eight wrought-iron nails, one machine-cut nail, three scraps of sheet iron, and a chert core. One of the beads is of drawn clear glass with thin, white horizontal stripes, like the one found in the fill of Feature 2; the other is a simple, deep blue, drawn bead.

Discussion

Most of the artifacts from Feature 2 date from the first half of the nineteenth century. Thus, the trash in this feature was deposited there more recently than was the trash in the abandoned palisade ditches. The compound brass buttons and the glass beads, however, are the same types as specimens from the palisade ditches and presumably date from the mid-eighteenth century. Feature 2 contained not only trash, but also soil that probably washed or slumped into the pit fortuitously; a few eighteen-century artifacts could have been in this soil.

In any case, most of the trash clearly was thrown into the pit in the early nineteenth century, most likely by people who lived in a nearby house. There is a good chance that the house could be located archaeologically and identified by matching artifacts from Feature 2 with artifacts at the house site. It is doubtful that early nineteenth-century residents dug the pit expressly as a depository for refuse. The Puebla Blue-on-White sherd suggests that some domestic wares from Mexico reached Laurens through the Spanish occupation on the west bank of the Mississippi River, which began in 1763.

FEATURE 3/4

After the plowzone at E.T. 2b and 2c was removed in 1983, two distinct pit outlines, separated by a narrow zone of apparently undisturbed clay were observed. They were designated Features 3 and 4, but neither was explored any further at that time (Jelks and Ekberg 1984:20–21).

In August 1984, more thorough excavation revealed that Features 3 and 4 were both parts of a single large pit (Figure 14). The apparently undisturbed zone between them turned out to be a layer of clean clay that was a component of the fill inside the large pit encompassing both features.

The lower part of the Feature 3/4 fill contained a deposit of limestone chunks, including several flat pieces that would make good flagstones, among which were occasional charcoal fragments, discarded artifacts, and garbage bones. Above the limestone concentration the pit fill was a dark soil containing garbage bones, charcoal, artifacts, and a scattering of limestone fragments generally smaller that those in the bottom part of the pit.

Feature 3/4 Artifacts

Ceramics. There are 16 faïence sherds: nine plain white, six blue-on-white, and one that has a blue-on-white decoration on its interior surface and a purple-brown mottled glaze on the exterior. The latter sherd is of the variety reported by Noël Hume (1974:142) as having been made in Rouen in the eighteenth century.

The typical French coarse earthenware having a thin white slip under a bright green glaze is represented by nine sherds. Also, there is a sherd of gray, salt-glazed stoneware; seven of lead-glazed, brown earthenware; and two of blue-on-white oriental porcelain.

Glass. Four sherds are from pale blue-green case bottles, 35 are from green wine bottles, 18 came from green case bottles, and two are from pale blue-green vials. There is one sherd of flat clear glass; three curved clear sherds probably are from vials or wine glasses.

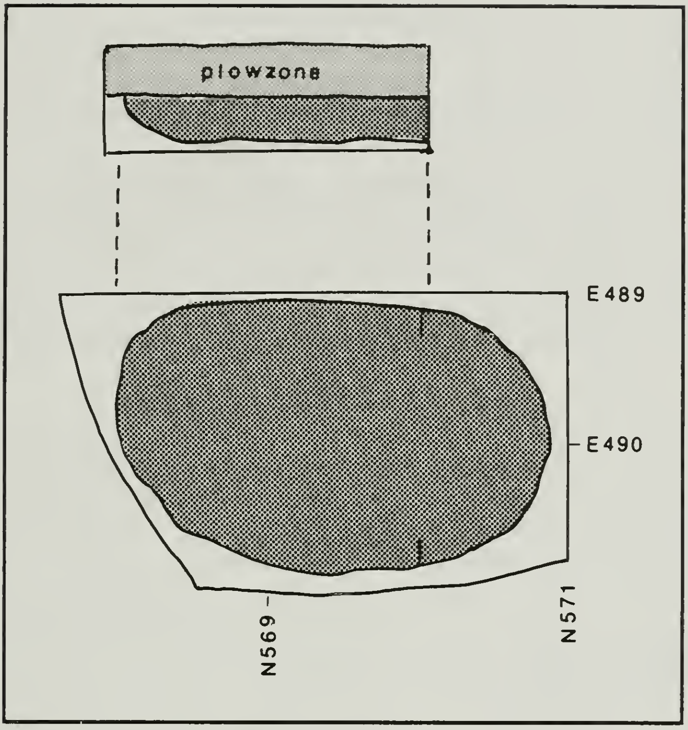

Fig. 14. Profile and plan of Feature 3/4.

Seven small seed beads, 2–3 mm in diameter, were found while water-screening fill from Feature 3/4: three compound, clear/opaque white; one simple, bright blue, translucent; one simple, light blue, translucent; and two simple, deep wine beads that appear black to the naked eye.

Metal (Figure 27d). An iron trigger guard consisting of the bow and distal extension, including the complete finial was found in this feature. There are two screw holes, one about 15 mm from each end of the bow, for attaching the trigger guard to the wooden stock. The proximal end is missing. This guard is similar to one illustrated by Hamilton (1980:Figure 31) and identified by him as from a late seventeenth-century French gun.

A key 62 mm long, a small screw, 52 wrought-iron nails, and four unidentified scraps comprise the remaining iron artifacts. There are two cast-brass buttons with convex obverse faces that are plain save for a single groove around the edges. Both are 13 mm in diameter. The only other brass artifact is a trigger-guard finial with a flat face and beveled edges that is broken across a screw hole.

Two lead musket balls that have been hammered into discs, one thin (3 mm), the other thick (9 mm), and 12 bird shot 2–4 mm in diameter complete the inventory of metal artifacts.

Bone. An unusual bone object appears to be a piece of a small bone cylinder that was threaded on the inside at one end. Perhaps the complete bone artifact was a handle for some small tool.

Discussion

Although the Feature 3/4 pit contained a dense pile of limestone rubble intermixed with charcoal, neither the edges of the pit nor the pit fill showed any evidence of in situ burning. Therefore, the stones, charcoal, and other trash were dumped into a pit that probably was originally dug for some purpose other than trash disposal. All the identifiable artifacts found within the pit are typical French colonial objects. If the trigger guard (Figure 27d) is indeed from a gun made in the late seventeenth century, this could be one of the earliest features at the site. Its placement immediately inside the fort's north curtain suggests that it could have been a cellar under a small structure built against the palisade.

FEATURE 8

A section of this feature occupied the north end of E.T. 4. It appeared to be a pit of some kind filled with dark soil containing limestone fragments and charcoal. The south edge of the feature curved across the trench floor; its overall size and shape are unknown as it was not excavated. The feature's bottom was located with a soil corer at a depth of 54 cm below the trench floor (84 cm below ground surface). Because no artifacts were recovered from Feature 8, its age and cultural affinities are uncertain. It seems likely, however, that it is the remnant of some eighteenth-century French structure inside the fort.

FEATURE 10

This large pit of undetermined size and shape was located just inside the north palisade ditch, at the south end of E.T. 5. The soil within the feature, darker than the surrounding geologic matrix, contained abundant limestone fragments, garbage bones, and burned earth. The feature was not excavated, but the soil corer indicated it extended to a depth of 80 cm below the ground surface.

No artifacts were collected from the feature, but four nondiagnostic artifacts—a green wine-bottle sherd and three wrought-iron nails—were recovered in E.T. 5a plowzone, which overlay Features 10 and 9.

FEATURE 12

In 1983, a section of this large feature's edge was exposed just below the plowzone in E.T. 9, but it was not excavated then. Testing with a soil corer revealed that the features's dark fill, containing many limestone fragments, extended to a depth of 84 cm below surface; beneath that was a layer of very sandy soil that rested on the bottom of the feature, about a meter below surface. The corer established that Feature 12 extended at least 3.5 m to the north of the segment in E.T. 9. No artifacts were collected in 1983.

In October 1984, Feature 12 was re-exposed and the fill was removed from approximately its west half. It proved to be a large, round pit with a concave bottom, about 2.6 m in circumference and reaching a maximum depth below surface of about 105 cm (Figure 15). The fill consisted of four distinct layers, labeled Zones A through D from top to bottom (Figure 15). Zone A—a very dark, humus-stained soil with a lens of limestone rubble at its base—contained potsherds, nails, bone fragments, and other trash. Zone B, the richest of the zones in artifact

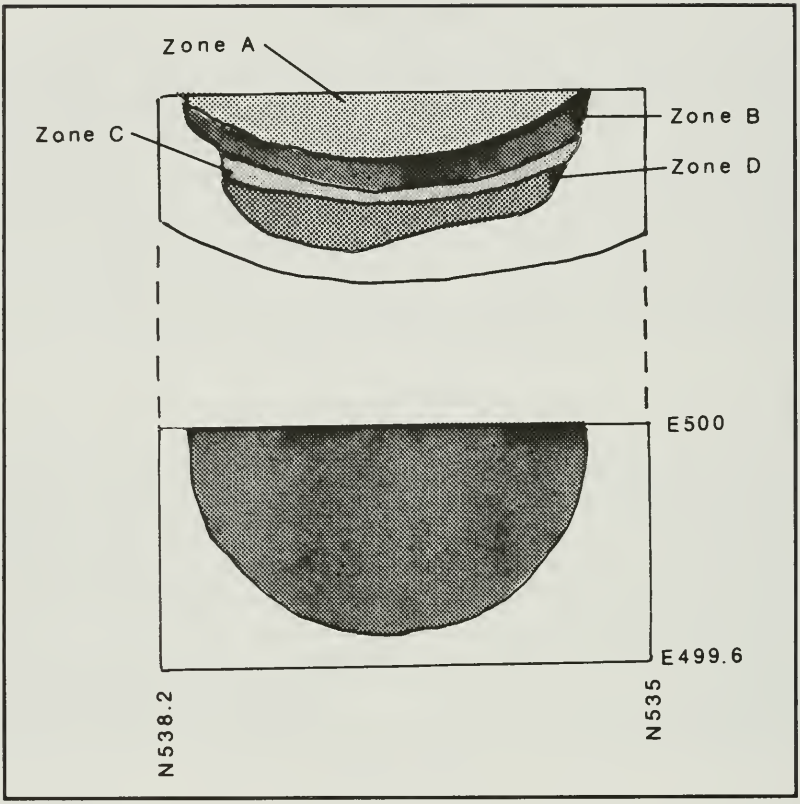

Fig. 15. Profile and plan of Feature 12.

content, was similar to Zone A in appearance but was clearly separated from it by the lens of limestone rubble. Zone C, a thin layer of clean, light, yellow brown sand, appeared to be sterile of cultural material, but a human maxilla with an articulated zygomatic was found in it. Within Zone D, which consisted of dark, humus-stained, sandy soil, there were many limestone fragments, numerous pieces of bone, and a few artifacts.

Feature 12 Artifacts

Ceramics from the fill of Feature 12 are one plain, white faïence sherd; a sherd of blue-on-white faïence; five fragments of brown earthenware with green translucent glaze; and 17 brown earthenware sherds (most of them from a single vessel) with a mottled brown glaze, similar to Rockingham or Whieldon ware.

There is a glass sherd from a green wine bottle and another from a blue-green bottle. A rectangular iron buckle 46 mm long by 31 mm wide, a musket ball 14 mm in diameter (.55 caliber), 40 wrought-iron nails, a cast-iron potsherd, a lead shot 5 mm in diameter, and 11 pieces of scrap iron comprise the metal artifacts from the feature. There are also two honey-colored, spall-type gunflints; a small trapezoidal slab of catlinite decorated with patterns of punctations, grooves, and scratches; and a deep blue, ellipsoidal, drawn glass bead 11 mm long and 7 mm in diameter.

Backfill dirt at Feature 12 provided four sherds of plain, white faïence; three blue-on-white faïence sherds; three lead-glazed sherds of brown earthenware; 10 sherds of the possible Rockingham or Whieldon ware (most from the same vessel as the similar sherds from the feature's fill); two sherds of oriental blue-on-white porcelain; and a bit of blue-on-gray Rhenish stoneware. Other artifacts from the backfill are six wrought-iron nails, two black spall-type gunflints, and a piece of scrap lead.

Artifacts from Plowzone above Feature 12 (Figure 29e)

The plow-disturbed soil above Feature 12 produced 13 artifacts: four plain, white faïence sherds; a faïence sherd with a blue decoration on a white background; a plain sherd of French coarse earthenware with a white slip under a bright green glaze; a lead-glazed sherd of brown earthenware; a blue-on-white oriental porcelain sherd; two green-glass wine-bottle fragments; two wrought-iron nails; and a disc of thin sheet copper 35 mm in diameter and less than 0.5 mm thick which has a small rectangular hole near its center.

Discussion

The symmetry and sharp edges of Feature 12 demonstrate that it was carefully dug; yet its purpose is uncertain. The layer of clean sand (Zone C) in which a human maxilla lay must have been deliberately dumped into the pit after it had been partially filled with trash. There is no source of sand at the fort site, so the sand in the pit had to have come from somewhere else, possibly a sandbar beside the river. Perhaps Zone C was surplus sand left over from mixing mortar or some other construction-related activity.

The human bones found in Zone C pose an intriguing problem. A human maxilla with 11 intact teeth and a nearly complete right zygomatic were the only human bones in the excavated half of the pit. Why someone (presumably a French man or woman) at Fort de Chartres during the early or mid-eighteenth century would discard part of a human skull in a domestic trash midden is open for speculation. Martin K. Nickels, physical anthropologist at Illinois State University, examined the maxilla and reported the following:

> I have examined the maxillary fragment and can report the following: It is from an adult human and has a wear pattern consistent with that of many pre-agricultural Native Americans in that there is a flat-worn occlusal (chewing) surface on all of the teeth that are present (left M1, PM2, PM1, C, and I2; right I2, C, PM1, PM2, M1, and M2) with no indication of dental pathology.
>
> There are no definite indications that the material is from a Native American, however, as such a wear pattern is clearly attainable in many individuals of various ethnic and populational backgrounds. Given the general condition of the teeth, I would estimate that the individual was an adult in his/her twenties or thirties. Although it is highly speculative, I am inclined to think that the individual is more likely a male than a female based simply on the relative size of the remaining front teeth.

FEATURE 13

This large pit (Figure 16) was discovered in the north part of E.T. 10 in 1983, at which time its limits were defined by coring the unexcavated area around the E.T. It appeared to be oval in shape with a length of approximately 4 m, a width of just over 3 m, and a depth near the center of more than 90 cm (the deepest the soil corer could reach). The bottom of the pit curved upward from the center to the edges. The segment of Feature 13 in E.T. 10 was excavated by 10-cm levels to 60 cm below the ground surface. The fill consisted of dark soil containing pieces of limestone, flecks of charcoal, occasional small ash lenses, and discarded artifacts.

In 1984, the west end of Feature 13 was exposed (approximately one third of the total area), and the fill in that portion was excavated in arbitrary 10-cm levels to 75 cm below surface, at which point excavation of the feature stopped before its maximum depth was reached.

Feature 13 intruded into a larger disturbed area, as was suggested by cultural refuse in the soil outside the feature's edge, down to at least 47 cm below surface. The dimensions and nature of this large disturbance were not ascertained.

Feature 13 Artifacts

Ceramics (Figure 21e-g). There are 14 sherds of plain white faïence, two rim sherds from blue-on-white faïence platters, three rim sherds from blue-on-white plates, a body sherd from a blue-on-white bowl, a blue-on-white faïence spout (possibly from a teapot), three lead-glazed earthenware sherds, a white salt-glazed stoneware sherd, a sherd of brown earthenware with a thin white slip under a bright green glaze, two pieces of blue-on-white oriental porcelain, and two fragments of German gray stoneware—one plain, the other with incised and blue decorations. Four white clay pipestem sections have bore diameters of 5⁄64 of an inch.

Glass. Six fragments of blue-green case bottles; nine green wine-bottle sherds; a small, flat, clear sherd; and three seed beads (2–3 mm in diameter) comprise the glass from the feature. Two of the beads are simple, one a deep ruby color, the other clear; the third is a compound red/green bead of the type often called Cornaline d'Aleppo.

Metal (Figures 28d, 29b, and 32f). There are 53 wrought-iron nails, ranging in length from less than 2 cm to about 8 cm, and two lead shot, both about 2 mm in diameter. Approximately half of a brass ring 26 mm in diameter appears too large for a finger ring. Seventeen fragile rings

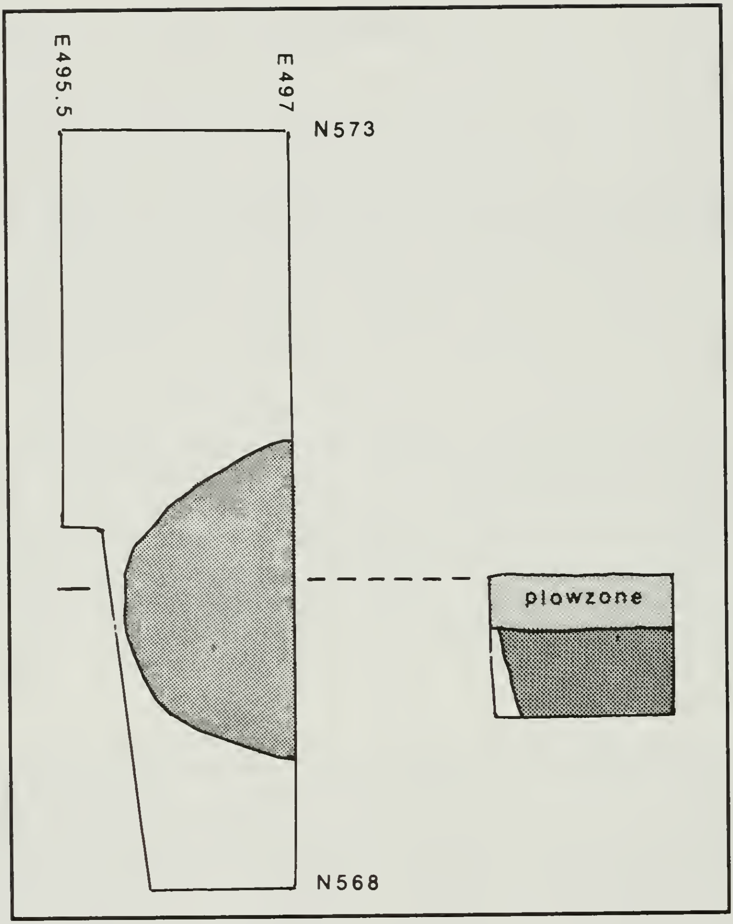

Fig. 16. Plan and profile of Feature 13.

made from narrow strips of very thin sheet brass must have been ornaments of some kind.

Stone. A small piece of honey-colored flint apparently came from a French gunflint.

Discussion

Feature 13 was a relatively large pit situated just inside the north palisade of the fort. As all of the diagnostic artifacts from the feature are of eighteenth-century origin, it may well have been a cellar associated with a structure inside the fort.

FEATURE 14

On the east side of E.T. 11 an anomaly appeared in the trench floor after the plowzone had been removed. Designated Feature 14 (Figure 17), the anomaly was darker than the undisturbed soil matrix surrounding it. No further work was done on this feature; therefore its shape, size, and depth remain unknown. No artifacts were found in the feature fill or in the plowzone above it.

FEATURE 15

E.T. 8 was placed near the presumed southwest corner of the fort in an effort to locate a bastion or whatever architectural feature might have been at the corner. No bastion or corner was found, but there was a large disturbed area that extended over almost all of the 1 x 4-m exploratory trench. The disturbed area, designated Feature 15, was darker than the yellowish geologic matrix and contained garbage bones, charcoal, limestone fragments, and artifacts. Due to lack of time, only one 10-cm level of feature fill, 30–40 cm below surface, was excavated in 1983; probing revealed, however, that the bottom of this feature was at least a meter below the ground surface, the maximum depth that the corer could reach.

To learn more about Feature 15, E.T. 8 was reopened and enlarged in 1984. It soon became evident that the feature was too large to permit complete exposure of its outline during that short field season, so it was probed with a soil corer in an effort to determine its approximate size and shape. The results were ambiguous and confusing because of considerable soil disturbance in the locality. A 1-m square was excavated at the west end of E.T. 8, extending it to the bottom of the feature, which was at 105 cm below surface.

After this limited investigation, it became clear that Feature 15 was a large pit—at least 3.5 m across and more than a meter deep (Figure 18). Its shape and size remain uncertain.

The fill inside Feature 15 was dark, organically stained soil containing discarded artifacts, garbage bones, and other trash. There was no distinct layering of the fill. The identifiable artifacts recovered from the feature all are of eighteenth-century French provenience. This suggests that the pit was a cellar or other feature, probably associated with the fort.

Feature 15 Artifacts

Ceramics. This feature produced 15 sherds of faïence: six plain white and nine with blue decorations on a white ground. In addition there were two sherds of common earthenware with a bright green glaze over a thin white slip; one sherd of lead-glazed, brown earthenware; one sherd of brown gray, salt-glazed earthenware; one sherd of plain, white earthenware with a clear glaze; two sherds of plain, shell-tempered Indian earthenware; and a small brick fragment.

A plain fragment of a white earthenware pipe bowl and eight sections of white clay pipestems were also recovered from the feature. Bore diameters of the latter are all 4⁄64 or 5⁄64 of an inch.

Glass. The glass artifacts from Feature 15 are 44 sherds from green wine bottles, 29 from blue-green case bottles, four from green case bottles, one sherd of flat clear glass, and 11 small seed beads between 2 and 3 mm in diameter, all made from sections of drawn canes. Seven of them are compound clear/white seed beads. The others are all of simple structure: one a deep wine color, one bright blue, one opaque white, and one of clear glass.

Metal. A complete clasp-knife blade is 10.5 mm long; two others with their tips missing are both estimated to have been approximately 12 cm long when complete. Three knife-blade fragments are too incomplete for original size estimates. Part of a small case knife includes a short section of the blade and part of a bone handle. An iron swivel served to attach a sling to a musket or rifle.

Of the 99 wrought-iron nails, most are small (2.5 to 4.5 cm long). A minute iron arm mounted on a pivot may be part of the escape mechanism of a clock or watch. Four fragments of sheet iron, a small tack, a small coiled wire (possibly a gun worm), and an eyelet of the type used in conjunction with a hook for fastening clothing complete the inventory of iron artifacts.

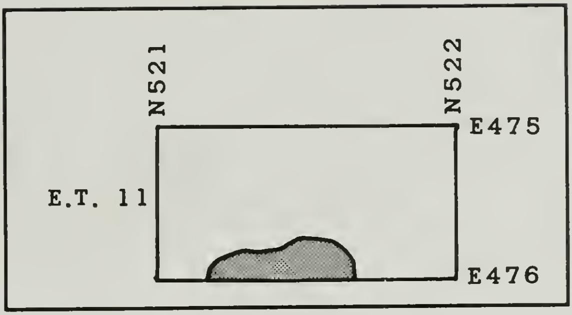

Fig. 17. Plan of Feature 14.

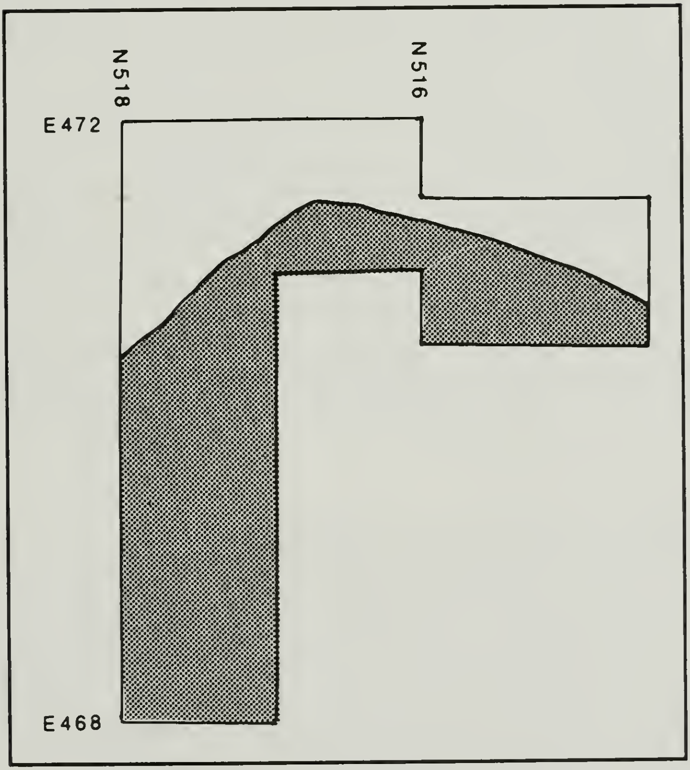

Fig. 18. Plan of Feature 15.

There are several brass objects. A piece of kettle brass rolled into a cylinder 16 mm long, then flattened, is 11 mm wide and 4 mm thick. Two cast-brass buttons, both having U-shaped attachment shanks and plain convex faces with a single peripheral groove, are similar to buttons from other features. Their diameters are 15.5 and 17.0 mm.

The obverse halves of two compound, hollow buttons were found in Feature 15, the complete one having a diameter of 17 mm. A small brass buckle with a molded design on its upper face measures 2.2 mm long by 1.8 mm wide. Ten small, fragile rings, 10–15 mm in diameter, made from strips of very thin sheet brass closely resemble similar objects found in Feature 13. A short section of brass wire with a diameter of 1.1 mm also came from the feature.

A musket ball from Feature 15 is 13–14 mm in diameter (approximately .53 caliber). A row of five bird shot, each with a diameter of 3.5 mm, is still attached to the mother by sprues. Two lead bird shot 2–4 mm in diameter and five bits of scrap lead conclude the inventory of metal artifacts.

Stone. Feature 15 yielded 17 honey-colored and one black spall-type gunflints. One of the former has been heavily chipped all around to make what looks like a circular scraper. Two Madison arrow points of white chert (Cambron and Hulse 1968:52–53), both shaped like isosceles triangles, came from Feature 15. One is 24 mm long, 11 mm wide at the base, and 2 mm in maximum thickness; the other is 27 mm long, 13 mm wide at the base, and 4 mm in maximum thickness.

There are two fragments of Indian stone pipe bowls: one of catlinite has a light groove below the lip; the other, of a gray stone (limestone?), is from a faceted bowl. A small slab of catlinite is probably a piece of manufacturing waste material.

Artifacts from Plowzone above Feature 15 (Figures 21c, 21h, 22a, and 30a-b)

From the plow-disturbed soil above the feature came two sherds of blue-on-white faïence, and one sherd each of white salt-glazed stoneware, brown gray salt-glazed stoneware, white clear-glazed earthenware, and brown earthenware with a thin white slip under a bright green glaze; also two clasp-knife blades, three fragments of green wine bottles, two wrought-iron nails, part of a brass buckle that when complete was 53 mm long and approximately 44 mm wide, and what appears to be a brass drawer pull with one end missing, estimated to have been about 120 mm wide before being broken.

Discussion

Judging from the artifacts collected from its fill, Feature 15 is of eighteenth-century French affiliation. This large pit, perhaps a cellar, probably was associated with a structure inside the fort.

FEATURE 16

This narrow ditch was discovered in E.T. 12 in 1984 while checking out a magnetic anomaly recorded by Weymouth's 1984 magnetic survey. E.T.s 15, 16, and 17, to the north of E.T. 12, also intercepted the ditch, and by probing with a soil corer to the south of E.T. 12, it was traced 6 m farther in that direction. Altogether, a 24-m section of the ditch was recorded, and it continued to the north and to the south for an unknown distance (Figure 7). Feature 16's dark fill contrasted clearly with the light, sandy earth just under the plowzone. The ditch was from 25 to 40 cm wide and averaged about 48 cm deep (below surface) (Figure 19).

The fill of the ditch, light gray in color, was devoid of visible charcoal, limestone, bone, or other trash such as occurred commonly in other features at the site. At E.T. 12, five small, circular stains appeared in the bottom of the ditch after the fill had been removed (Figure 19). They extended downward 2 or 3 cm below the ditch's bottom. The stains were of lighter hue than the ditch's fill, and there were light gray, sandy patches in each. Between 10 and 20 cm in diameter and closely spaced, they formed a straight line in the bottom of the ditch. Six similar stains were visible in the bottom of E.T. 15. These were probably postmolds from a low paling fence set in the ditch, perhaps along a property line or around agricultural lands.

Feature 16 Artifacts

The only artifact found in this feature was a misshapen, poorly cast, lead musket ball about 15 mm in diameter (.59 caliber,) which lay on the bottom of the ditch in E.T. 12.

Discussion

Fences made of closely spaced pales were commonly used to delineate property lines in the French Illinois Country. Feature 16 is probably evidence of such a fence. If projected onward toward the north, Feature 16 would come to a point at or near the southwest corner of the fort. If property lines were customarily marked with such fences in the

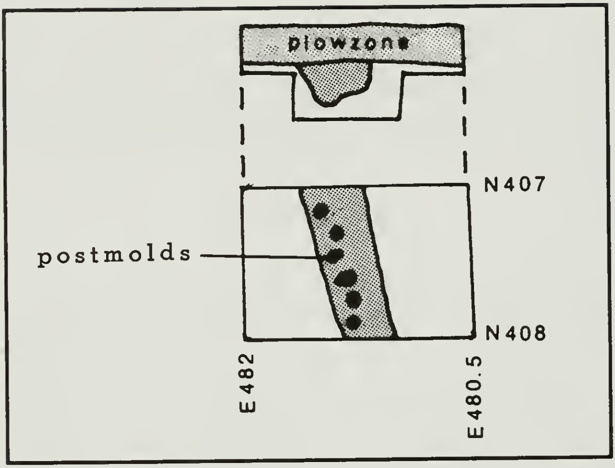

Fig. 19. Profile and plan of Feature 16 at E.T. 15.

settlement around Fort de Chartres, there is the possibility that they can be traced archaeologically. If this were done, perhaps a property map could be constructed which, when compared to existing land records, would identify the locations of plots held by particular persons in the eighteenth century.

FEATURES 17 AND 18

E.T. 21 was a 0.5-m trench, running approximately grid north-south, positioned between bean rows in a field east of the road that crosses the Laurens site. It was hoped that the south palisade ditch extended far enough to the east that it could be picked up across the road, so E.T. 21 was placed athwart the alignment of the south palisade ditch as projected from the fixes on the ditch at Features 11, 7, 1, and 6 (see Figure 7).

E.T. 21 did indeed intercept two anomalies; they were designated Features 17 and 18 (Figure 20). Feature 17 is probably a section of the south palisade ditch near the southeast corner of the fort. There was not enough time to explore the feature thoroughly, so confirmation of this hypothesis must await further field investigation.

As nearly as could be determined from the small exposure in E.T. 21, Feature 17 was a ditch that lined up with the previously located sections of the south palisade ditch. But it was wider (1.9 m) than the other exposed sections. Its depth was not determined. The feature's fill, which consisted of dark soil containing bits of charcoal and bone, contrasted sharply with the undisturbed soil on either side. A square protrusion, approximately 35 cm on a side, extended off the south edge of the feature toward the southeast (Figure 20). Possibly this was a large postmold at the corner of the fort.

About 1 m south of Feature 17 there was a narrow ditch containing three closely spaced postmolds 15 to 30 cm in diameter. This ditch, Feature 18, roughly paralleled Feature 17.

Artifacts from Plowzone above Features 17 and 18

In the plowzone in E.T. 21, overlying Features 17 and 18, three artifacts were recovered: two plain white faïence sherds and a lead-glazed brown earthenware sherd. Part of a Micmac-style pipe made of gray stone, probably limestone, was found on the plowed ground surface two or three meters east of Feature 18.

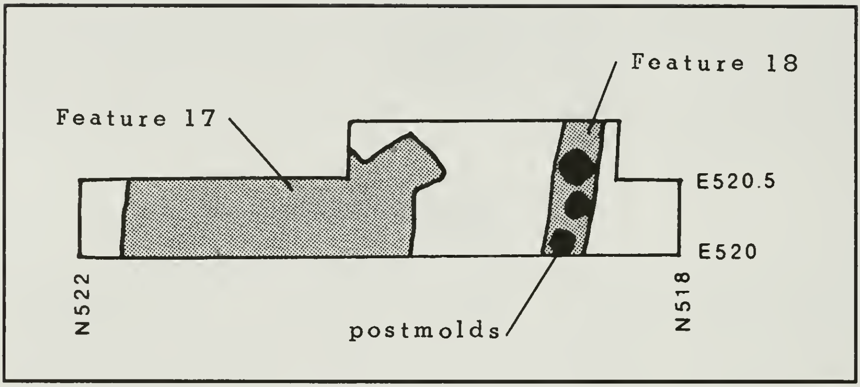

Fig. 20. Plans of Features 17 and 18.

Discussion

The southeast corner of the fort must have been near Features 17 and 18. If its remains have survived beneath the ground, which seems likely, it should be a fairly easy task to locate and expose them. If Feature 17 is part of the fort's palisade ditch, then whatever structure is represented by Feature 18 was outside the fort's curtain.

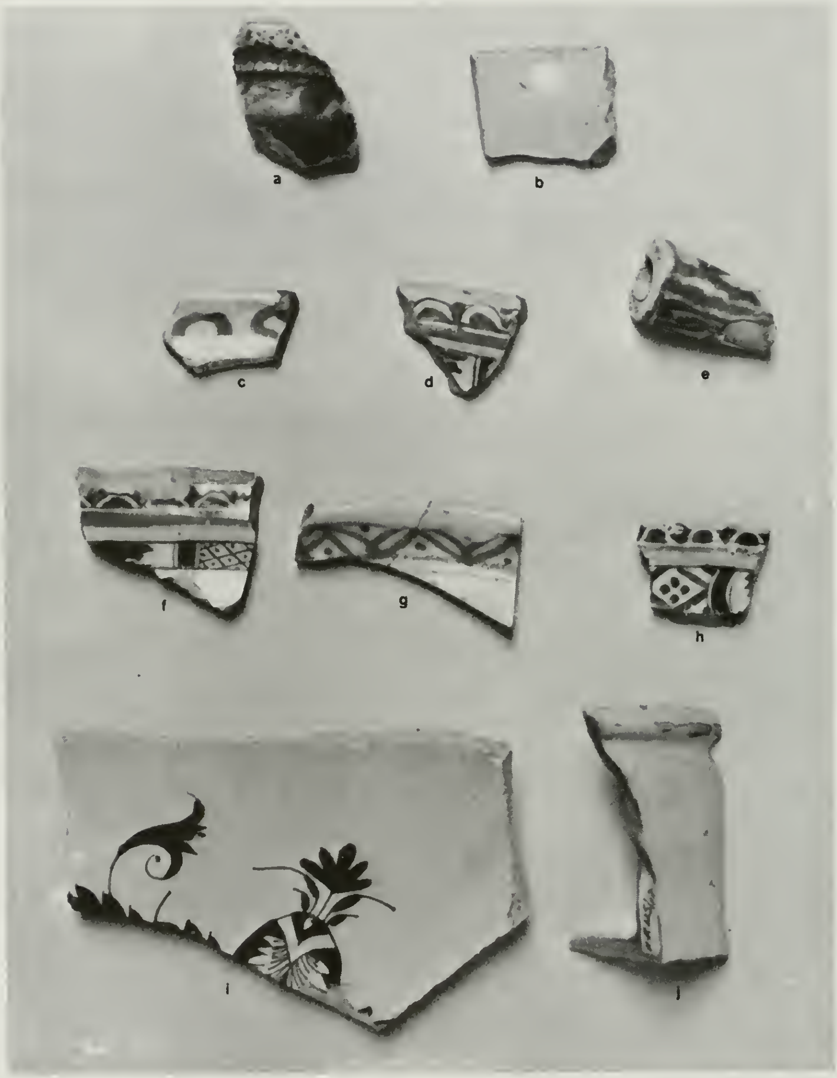

Fig. 21. French faïence. (a) E.T. 10; (b) E.T. 2; (c and h) E.T. 8; (d) Feature 1; (e-g) Feature 13; (i) E.T. 6; (j) E.T. 2.

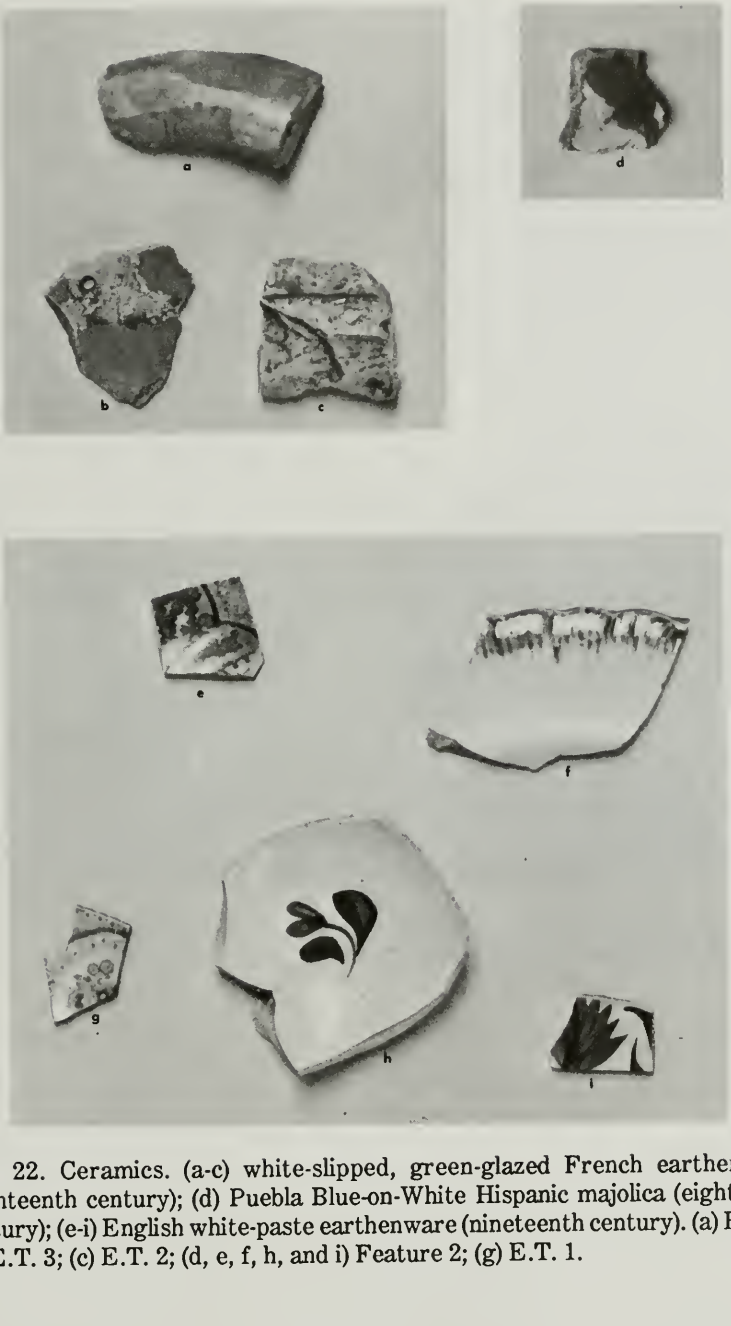

Fig. 22. Ceramics. (a-c) white-slipped, green-glazed French earthenware (eighteenth century); (d) Puebla Blue-on-White Hispanic majolica (eighteenth century); (e-i) English white-paste earthenware (nineteenth century). (a) E.T. 8; (b) E.T. 3; (c) E.T. 2; (d, e, f, h, and i) Feature 2; (g) E.T. 1.

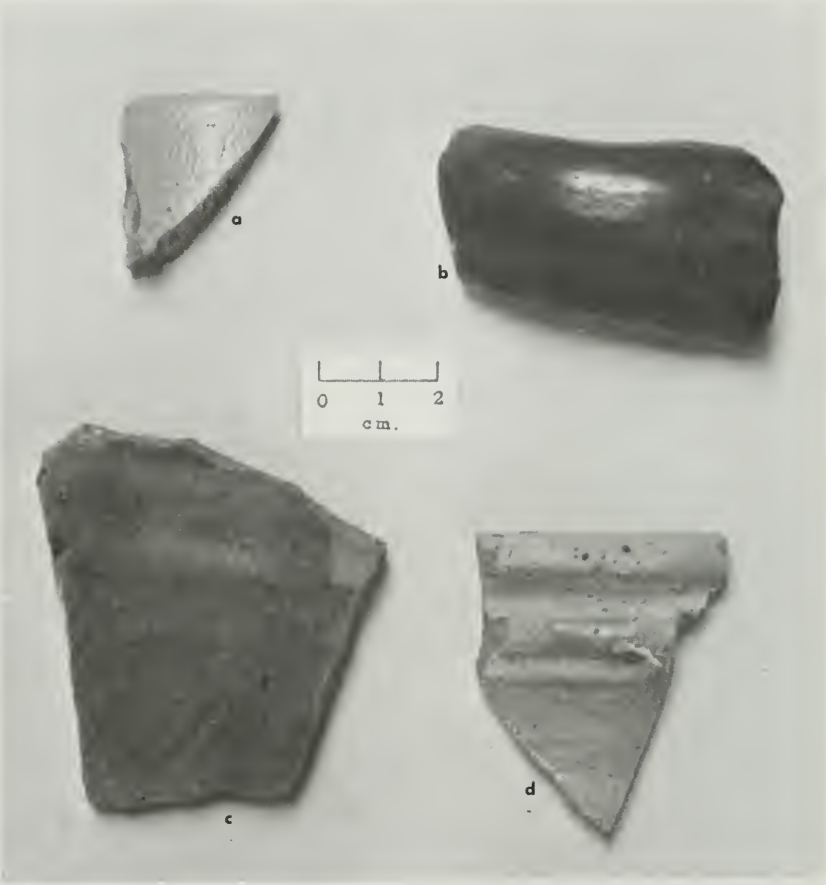

Fig. 23. Crockery. (a) salt-glazed stoneware; (b) Albany-slipped earthenware handle; (c and d) heavy earthenware. (a) E.T. 2; (b) E.T. 4; (c) Feature 1; (d) E.T. 3.

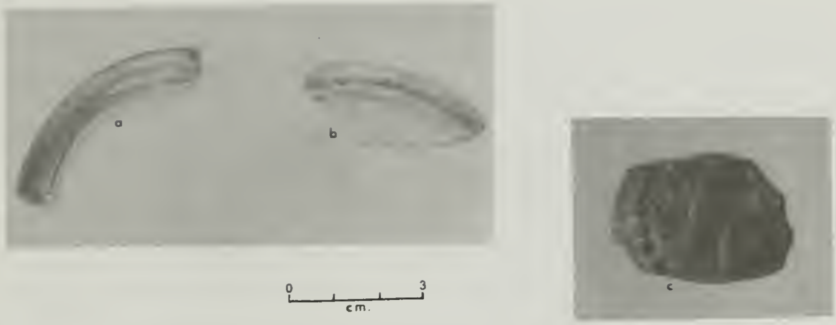

Fig. 24. Glass. (a and b) wineglass foot fragments; (c) sherd from decorated flask. (a) Feature 5; (b) E.T. 6; (c) Feature 1.

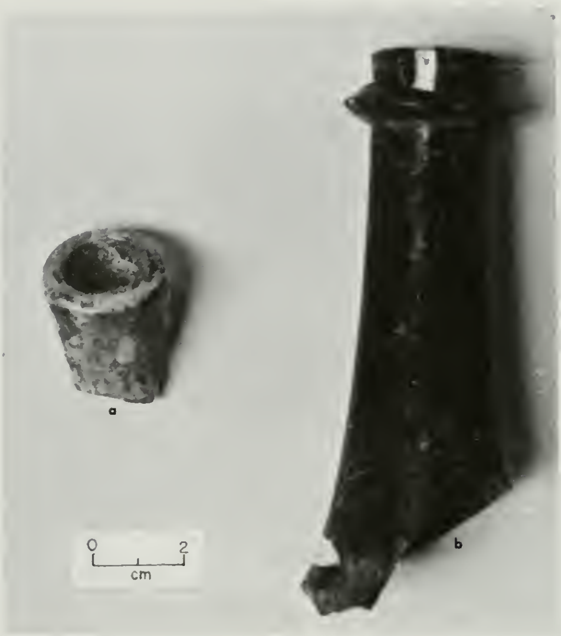

Fig. 25. Glass bottle necks. (a) blue-green case bottle; (b) green wine bottle. (a) Feature 2; (b) Feature 1.

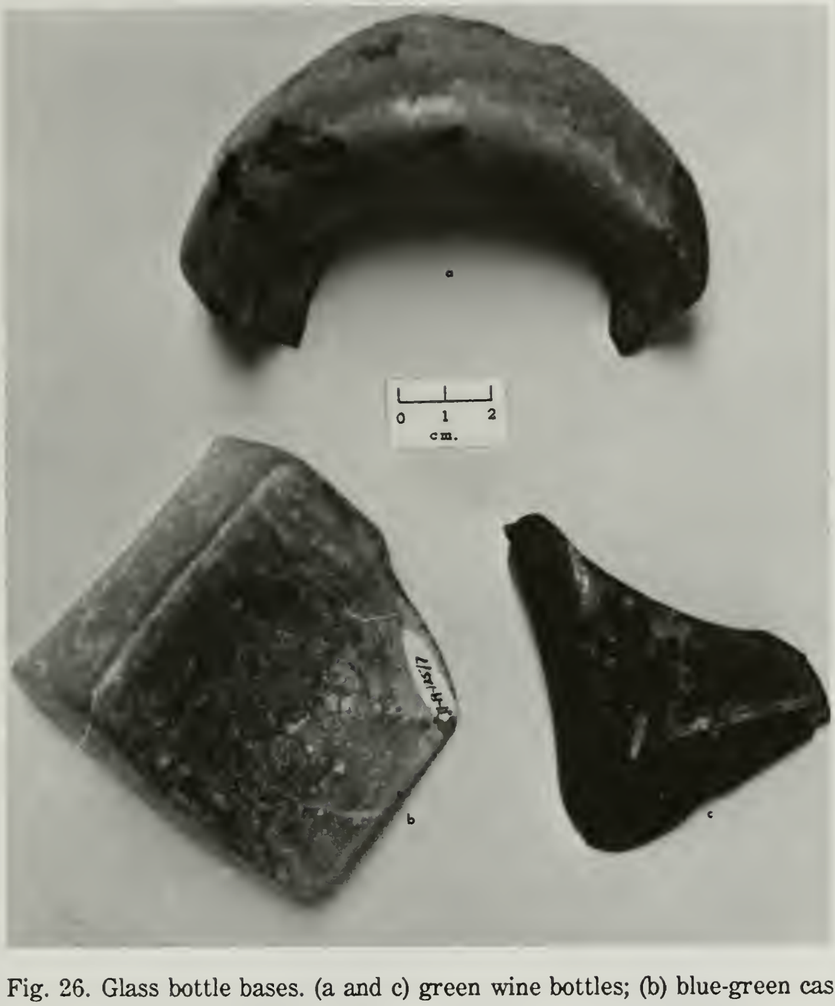

Fig. 26. Glass bottle bases. (a and c) green wine bottles; (b) blue-green case bottle. (a) Feature 7; (b and c) E.T. 1.

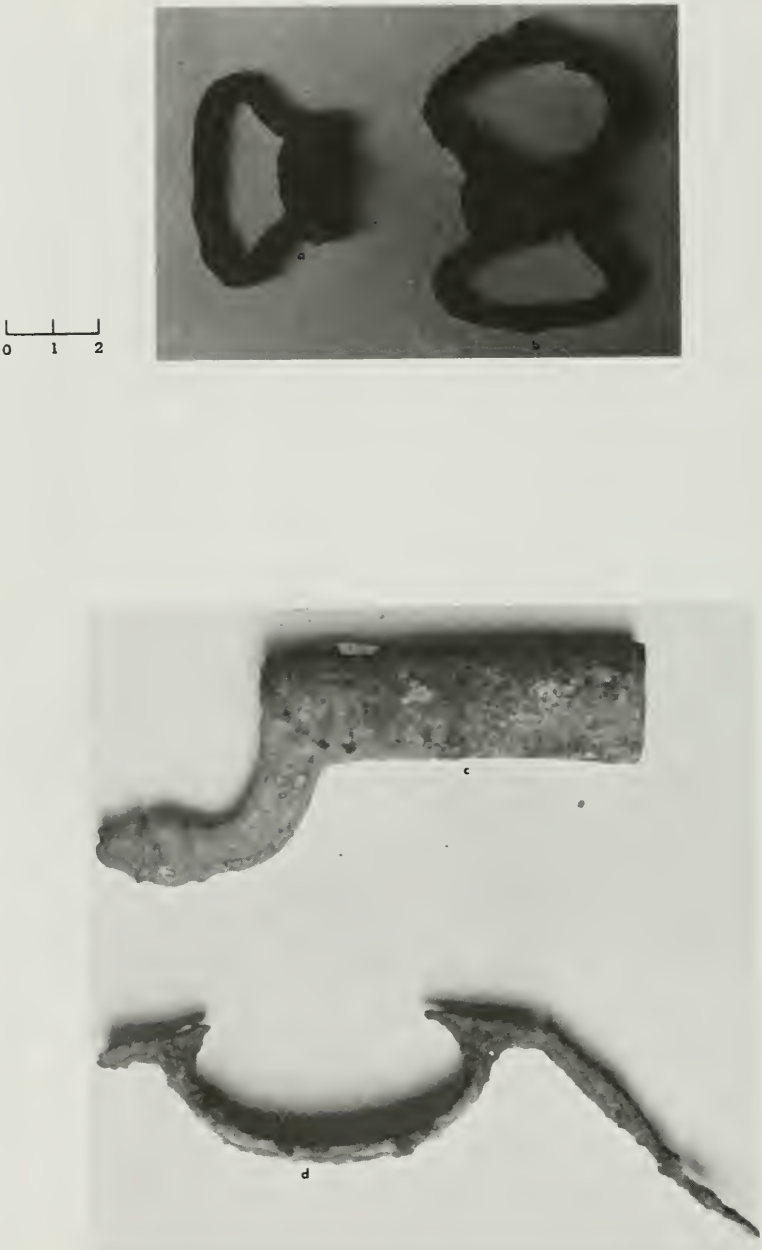

Fig. 27. Iron gun parts. (a and b) sling swivels; (c) bayonet; (d) trigger guard. (a and b) E.T. 1; (c) E.T. 2; (d) Feature 3.

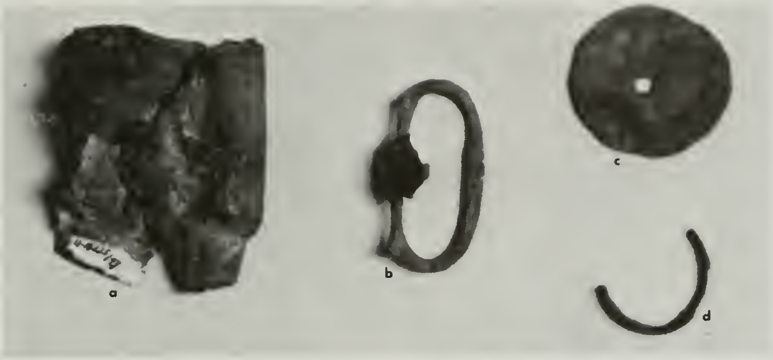

Fig. 28. Brass artifacts. (a) kettle fragment; (b) buckle; (c) perforated disk of kettle brass; (d) ring fragment. (a) Feature 2; (b) Feature 1; (c) provenience uncertain; (d) Feature 13.

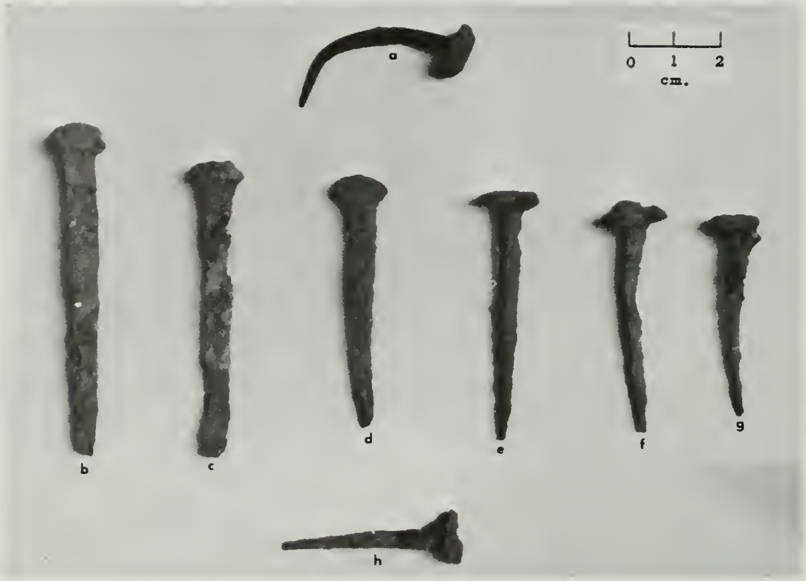

Fig. 29. Wrought-iron nails. (a and h) Feature 5; (b) Feature 13; (c) E.T. 3; (d and g) E.T. 2; (e) E.T. 9; (f) Feature 1.

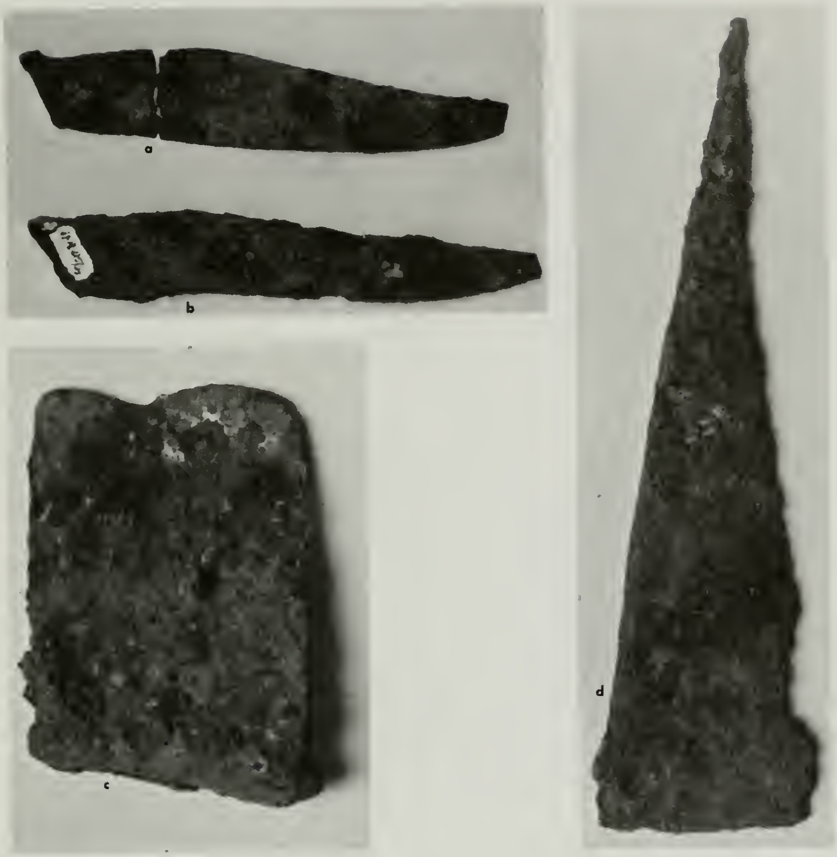

Fig. 30. Iron artifacts. (a and b) clasp-knife blades; (c) wedge; (d) tip of scythe. (a and b) E.T. 8; (c) Feature 2; (d) Feature 5.

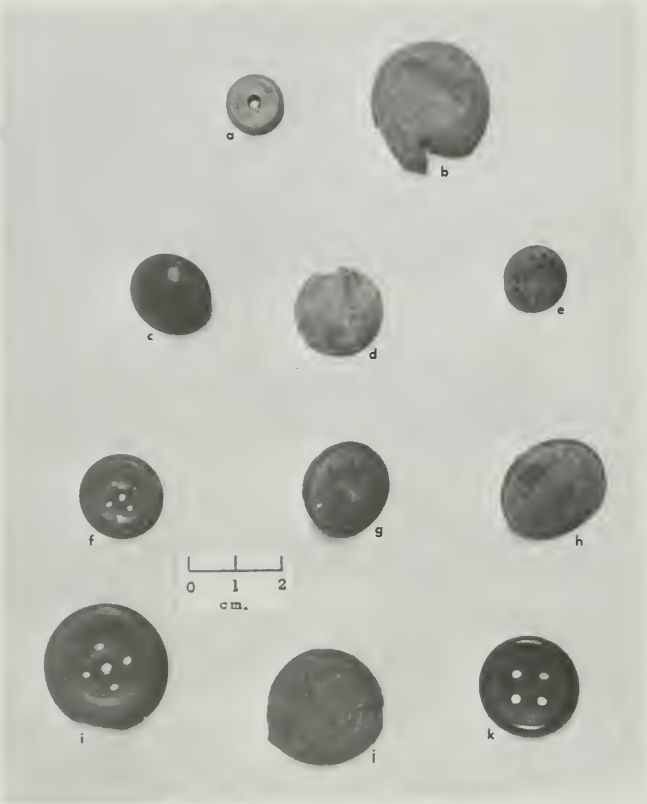

Fig. 31. Buttons. (a, f, i, and k) bone; (b-e, g, h, and j) brass. (a and b) E.T. 6; (c, e, f, and i-k) Feature 2; (d) E.T. 8; (g and h) Feature 1.

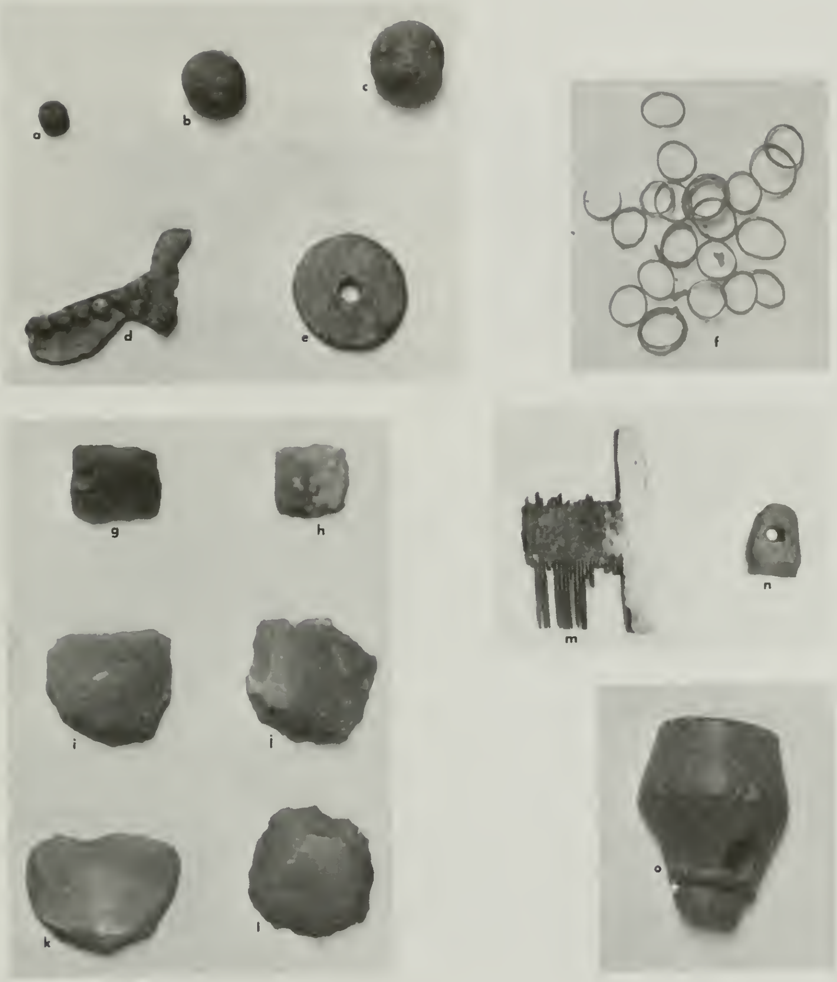

Fig. 32. Miscellaneous artifacts. (a-c) lead musket balls; (d) lead goose shot still attached to sprues; (e) lead whizzer; (f) thin brass rings; (g-l) gunflints; (m) bone comb; (n) perforated bone; (o) catlinite Micmac pipe. (a) provenience uncertain; (b and g) Feature 2; (c, h-j, and m) Feature 1; (d, k, and l) E.T. 8; (e, and n) E.T. 1; (f) Feature 13; (o) E.T. 2.

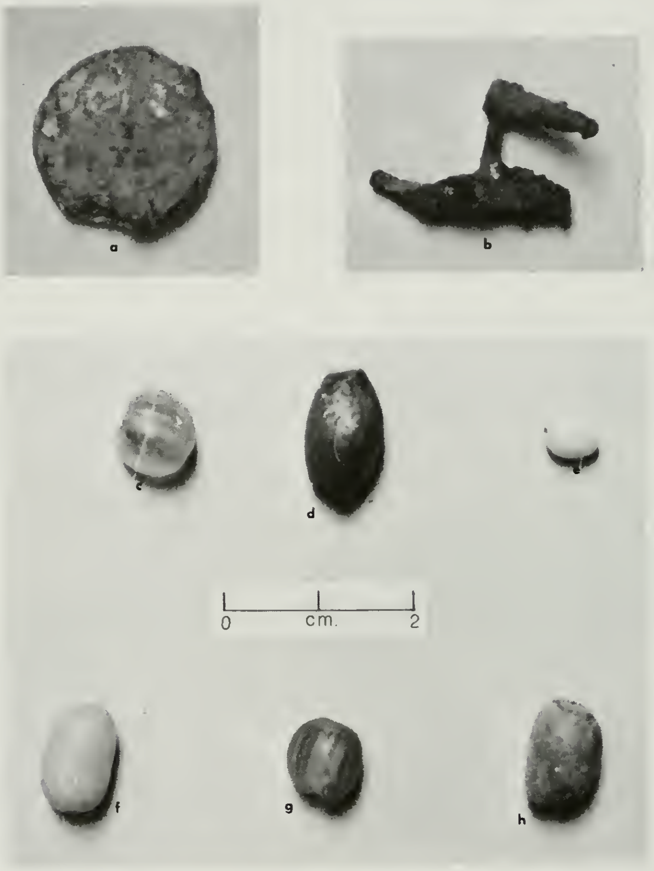

Fig. 33. Miscellaneous artifacts. (a) lead bale seal with “CENTAVO” inscribed on it; (b) unidentified small iron mechanism; (c-h) glass beads. (a and h) Feature 2; (b) E.T. 8; (c and e) Feature 1; (d) uncertain provenience; (f) E.T. 1; (g) Feature 5.

CHAPTER 5:
EXPLOITATION OF ANIMAL RESOURCES

Archaeological investigations at the Laurens site provide an unusual opportunity to discover how early historic human populations exploited animal resources in the bountiful American Bottom region of southern Illinois. Initial fieldwork at Laurens in 1983 revealed many animal remains that had been discarded by former inhabitants and preserved in a variety of subterranean features such as palisade ditches, cellars, and refuse pits. Bones were also numerous in areas of sheet midden that had been disturbed by recent agricultural activities. Analysis of animal remains was confined to feature contexts and concentrated on those features that contained exclusively eighteenth-century deposits estimated to date between ca. 1720 and ca. 1775.

Despite voluminous documentary sources on the French colonial presence in the Mississippi Valley and the Illinois Country, surprisingly little is known about the exploitation of local animal populations by those who lived at or near Fort de Chartres I and II. The numerous animal remains provide much information about refuse disposal, but, more importantly, a detailed study of this faunal assemblage can contribute to a more comprehensive understanding of the importance of wild animals in the early French colonial diet. Questions that may be addressed include: (1) What proportion of the animals represented at the Laurens site are domesticated species? (2) Which wild species were exploited? (3) Were faunal resources acquired from each of the major resource zones (i.e., the upland till plain, the bluff escarpment, the Mississippi River floodplain, and various aquatic habitats), or were efforts concentrated on particularly productive areas that were easily accessible from the site? Because remote sensing and archaeological fieldwork accurately delineated remnants of the palisade trenches, the faunal assemblage may also be used to determine whether species composition is homogenous or whether it varies for different areas of the site or for different categories of archaeological features (e.g., palisade ditches, refuse pits, and so forth).

Finally, the faunal assemblage from Laurens may be compared to those from other French sites in the Midwest. An eighteenth-century center for French commerce and government in the Illinois Country would be expected to have a subsistence pattern rather different from that of an Indian fur-trading post where only a small and largely civilian French population was maintained (e.g., Fort Ouiatenon in the upper Wabash Valley). The Laurens site faunal assemblage, along with collections from the Fort de Chartres III, may eventually be used to demonstrate changes in animal-exploitation patterns that coincided with the growing importance of Fort de Chartres III as an administrative and population center. Further discussion of this issue will be presented in the concluding chapter.

An assemblage of over 6,000 animal remains from several distinct eighteenth-century contexts was recovered at the site. Features 1 and 17 represent separate areas of the south palisade trench from which a total of 1,580 vertebrate specimens was recovered. An additional 441 bones were collected from Feature 5, part of the north palisade trench. Five additional features contained refuse from contexts other than the palisade trenches. Located just inside the north palisade line, a refuse pit designated Feature 3 yielded 431 bones; 509 specimens were associated with Feature 12, a refuse pit located midway between the north and south palisade lines. Feature 13, a possible cellar located near the north palisade, produced a sample of 1,114 bones. More than 2,000 bones were obtained from Feature 15, another large pit or cellar near the southwest corner of the fort. Located approximately one meter south of the south palisade line is Feature 18. Only eight elements were recovered from this refuse pit, the only one discovered outside the palisade. In addition to the eighteenth-century features, 176 animal remains were recovered from Feature 2, an early nineteenth-century trash pit.

METHODS

Recovery procedures were described in Chapter 3; both dry-screened and water-screened samples were analyzed. After initial processing, all faunal remains were removed to the Illinois State Museum where specimens from feature contexts were identified by comparing them to modern skeletal specimens in the comparative osteology collection. Attributes related to provenience, biology, and condition were encoded on an IBM-compatible microcomputer using dBase II software. This information consisted of (1) provenience (feature and lot designations); (2) class of animal (mammal, bird, reptile, fish, etc.); (3) taxon to the finest level possible, ideally genus and species; (4) anatomical element; (5) symmetry (left, right, or midline); (6) portion of element (e.g., proximal, distal, shaft, open or fused epiphysis); (7) completeness of element; (8) body size (8-cm size-length class for identified fish; large, medium, or small for unidentified mammal and bird bones); and (9) modifications (e.g., burning, cut marks, other human modifications related to artifact production and use, staining, weathering, rodent or carnivore gnawing). Estimates of length for fish are based on standard length for all taxa except bowfin and gar, for which total-length estimates are reported. Zoological nomenclature follows Jones et al. (1986) for mammals, American Ornithologists' Union (1982) for birds, Conant (1975) for reptiles and amphibians, and Smith (1979) for fish.

Summary calculations include tabulations of number of identified specimens (NISP) and minimum number of individuals (MNI) per taxon within a given feature. Two or more specimens were counted as one if they were fragments that could be refitted (e.g., an unfused epiphysis that fit to its corresponding shaft). MNI estimates are based on element, symmetry, portion, and body size. MNI for gross-level taxonomic categories, such as families, are provided only if they are additive to identifications at more-precise levels. Calculation of MNI is heavily influenced by the way in which various provenience units are segregated or integrated for the analysis (see discussions in Grayson 1973, 1978, 1984). Total MNI was estimated for each component (1) on the basis of cumulative MNI calculated from separate features assuming that no individuals were disposed of in more than one feature (MNI by maximum distinction approach; see Grayson 1973), and (2) by considering all animal remains from the site as a whole without allowing for specific designations by feature (MNI by minimum distinction approach). MNIs calculated by the maximum distinction approach are likely to be exaggerated, whereas estimates based on the minimum distinction approach are conservative.

The relative importance of the various animal taxa was also evaluated using allometric scaling, a technique that provides an estimate of the amount of edible meat obtained from the various animals represented at the site. As described by Reitz and Scarry (1985:18), "the weight of the archaeological bone is used in an allometric formula to predict the quantity of biomass for the skeletal mass recovered rather than the total original weight of the individual animal represented by the recovered bone." Biomass estimates were made for each feature according to formulae presented by Reitz and Honerkamp (1983:15). This approach avoids the problem of whether or not the meat from entire animals was consumed at the site where the archaeological sample was obtained. As true of other measures of species importance, the interpretive value of biomass estimates is not the *absolute* quantities projected for each taxa; instead, biomass is an alternative measure to NISP and MNI for evaluating the *relative* importance of various taxa in a given assemblage.

EIGHTEENTH-CENTURY CONTEXTS

Excluding sediment samples processed by waterscreening, an assemblage of 6,137 animal remains was recovered from eighteenth-century proveniences at the Laurens site. Although only 37% of the assemblage by count was identified, this portion constitutes over 80% by total weight (Table 1). By class, mammals are most abundant, with 70% of the specimens, and birds contribute approximately 25%. Considerable diversity is exhibited with 50 vertebrate taxa represented (Table 2).

Aquatic Fauna

The presence of several aquatic and semiaquatic species (Table 2) indicates that these species were included in eighteenth-century diets at the Laurens site. Overall, fish remains are not abundant, but identified species suggest that the main channel of the Mississippi River was the focus of fish procurement, while creeks, lakes, and backwater sloughs were of less significance as sources of protein. Nearly 75% of the identified fish bones in the macrorecovery sample are from very large blue catfish ranging in size from about 70 cm to 100 cm, with most at the large end of this range. The early French settlers in this region were fond of catfish and savored their delicate flesh (Ekberg 1985:302). One-half of the features contained buffalo fish, with individuals ranging in size from 24 to 72 cm. Paddlefish is another main-channel species represented, although only from water-screen samples. Black bass (i.e., either largemouth or smallmouth bass) and bowfin are the only fish in the assemblage common to shallow ponds or sloughs on the floodplain, but neither taxon is abundant (bowfin was identified from one scale). In contrast, numerous investigations in the American Bottom region (see summary by Kelly and Cross 1984) and at the nearby Modoc Rock Shelter (Styles et al. 1983) have shown fish from various habitats to be prevalent among prehistoric faunal assemblages. At the nearby Waterman site, fish bones contributed nearly 13% of the eighteenth-century faunal assemblage associated with the Kaskaskia and Michigamea habitation site, and backwater lakes were the probable source since bowfin had the largest representation (Parmalee and Bogan 1980).

TABLE 1.

Composition by Class of the Eighteenth-Century Faunal Assemblage. (NISP, number of identified specimens; MNI, minimum number of individuals calculated by minimum distinction method, provenience distinctions ignored.)

	NISP (MNI)	% NISP	Weight (g)	% Weight	Biomass (kg)	% Biomass
MAMMALIA	4321	70.6	27,367.0	93.8	356.463	92.8
Identified	1209 (47)		22,125.1		286.197	
Unidentified	3112		5241.9		70.266	
AVES	1544	25.2	1496.6	5.1	22.443	5.8
Identified	914 (104)		1234.9		18.432	
Unidentified	630		261.7		4.011	
REPTILES	13	0.2	26.6	0.1	0.523	0.1
Identified	12 (4)		26.2		0.506	
Unidentified	1		0.4		0.017	
OSTEICHTHYES	219	3.6	263.9	0.9	4.547	1.2
Identified	139 (19)		227.1		3.868	
Unidentified	80		36.8		0.679	
VERTEBRATA	20	0.3	10.6	0.04	--	
Totals	6117	99.9	29,164.7	99.9	383.976	99.9
Total Identified	2274 (174)		23,613.3		309.003	
% Identified		37.2		81.0		80.5

TABLE 2.

Species Composition of Eighteenth-Century Component. (NISP, number of identified specimens; MNI, minimum number of individuals: Min, minimum distinction approach; Max, maximum distinction approach.)

Taxon	NISP	% NISP	MNI (Min)	MNI (Max)	Weight (g)	Biomass (kg)	% Biomass
MAMMALS							
Opossum, *Didelphis virginiana*	6	.26	2	4	19.0	.415	.13
Cottontail, *Sylvilagus floridanus*	4	.18	1	3	5.2	.128	.04
Gray Squirrel, *Sciurus carolinensis*	11	.48	3	5	4.4	.111	.04
Beaver, *Castor canadensis*	8	.35	1	2	24.6	.500	.16
Dog/Coyote, *Canis* sp.	1	.04	1	1	4.8	.108	.03
Fox/Dog/Coyote, Canidae	1	.04	-	1	.4	.012	.00
Black Bear, *Ursus americanus*	26	1.14	2	8	220.3	3.904	1.26
Raccoon, *Procyon lotor*	9	.40	1	2	3.6	.087	.03
Fisher, *Martes pennanti*	1	.04	1	1	.9	.024	.01
Domestic Cat, *Felis catus*	3	.13	1	2	11.3	.243	.08
Pig, *Sus scrofa*	169	7.43	6	18	1514.1	22.977	7.44
Elk, *Cervus elaphus*	1	.04	1	1	1.1	--	--
White-tailed Deer, *Odocoileus virginianus*	526	23.13	17	27	5676.1	75.232	24.35
Deer/Elk, Cervidae	2	.09	-	-	118.5	.755	.24
Bison, *Bison bison*	2	.09	- (1)	- (1)	301.2	4.477	1.45
Cattle, *Bos taurus*	15	.66	- (3)	1(6)	1889.4	26.287	8.51
Cattle/Bison, *Bos/Bison*	424	18.65	10	18	12,330.2	150.937	48.85

TABLE 2 (continued).

Taxon	NISP	%	MNI		Weight (g)	Biomass (kg)	Biomass %
			(Min)	(Max)			
BIRDS							
American Bittern, *Botaurus lentiginosus*	1	.04	1	1	.5	.011	.00
Great Blue Heron, *Ardea herodias*	1	.04	1	1	.6	.013	.00
Trumpeter Swan, *Cygnus buccinator*	52	2.29	5	11	225.9	3.314	1.07
Anserinae, Swan/Goose	1	.04	-	-	.5	.011	.00
Snow Goose, *Chen caerulescens*	25	1.10	2	3	34.7	.529	.17
Canada Goose, *Branta canadensis*	134	5.89	8	17	299.3	4.203	1.36
Canada/Snow Goose, *Branta/Chen* spp.	6	.26	-	-	6.6	.123	.04
Wood Duck, *Aix sponsa*	1	.04	1	1	.4	.009	.00
Mallard/Black Duck, *Anas platyrhynchos/rubripes*	25	1.10	5	7	24.8	.423	.14
American Wigeon, *Anas americana*	1	.04	1	1	.7	.015	.00
Anas spp.	2	.09	1	2	1.3	.028	.01
Blue-winged/Green-winged Teal, *Anas discors/crecca*	48	2.11	8	8	14.9	.269	.09
Unidentified Dabbling Duck, Anatini	34	1.50	7	11	18.0	.322	.10
Bay Duck, *Aythya* spp.	3	.13	1	1	2.1	.040	.01
Bufflehead, *Bucephala albeola*	1	.04	1	1	.4	.009	.00
Hooded Merganser, *Lophodytes cucullatus*	1	.04	1	1	.2	.005	.00
Unidentified Small Duck, Anatinae	32	1.41	3	4	9.1	.167	.05
Unidentified Duck, Anatinae	265	11.65	17	20	134.3	2.009	.65

TABLE 2 (continued).

Taxon	NISP	%	MNI (Min)	MNI (Max)	Weight (g)	Biomass (kg)	Biomass %
Bald Eagle, *Haliaeetus leucocephalus*	3	.13	1	2	5.7	.103	.03
Hawk, *Buteo* sp.	4	.18	1	2	1.8	.036	.01
Domestic Chicken, *Gallus gallus*	95	4.17	10	19	67.7	1.099	.35
Ruffed Grouse, *Bonasa umbellus*	1	.04	1	1	.2	.005	.00
Domestic Chicken/Prairie-Chicken, *Gallus/Tympanuchus*	3	.13	-	-	1.7	.033	.01
Wild Turkey, *Meleagris gallopavo*	98	4.31	9	18	273.5	3.910	1.27
Turkey/Chicken, Galliformes	1	.04	-	-	.2	.005	.00
Common Moorhen, *Gallinula chloropus*	1	.04	1	1	.3	.007	.00
Sandhill Crane, *Grus canadensis*	32	1.41	5	8	98.3	1.501	.48
Plover, *Pluvialis* sp.	9	.40	2	4	2.4	.049	.02
Greater Yellowlegs, *Tringa melanoleuca*	2	.09	1	1	.6	.013	.00
Hudsonian Godwit, *Limosa haemastica*	2	.09	1	2	1.4	.029	.01
Passenger Pigeon, *Ectopistes migratorius*	24	1.05	5	10	4.6	.095	.03
Barred Owl, *Strix varia*	2	.09	1	1	1.4	.028	.01
Pileated Woodpecker, *Dryocopus pileatus*	1	.04	1	1	.2	.005	.00
Crow, *Corvus brachyrhynchos/ossifragus*	2	.09	1	1	.5	.011	.00
Small Perching Bird, Passeriformes	1	.04	1	1	.1	.003	.00

TABLE 2 (concluded).

Taxon	NISP	% NISP	MNI (Min)	MNI (Max)	Weight (g)	Biomass (kg)	% Biomass
REPTILES							
Box Turtle, *Terrapene* sp.	2	.09	1	1	1.8	.047	.02
Red-eared Turtle, *Chrysemys scripta*	5	.22	2	3	20.4	.336	.11
Painted Turtle, *Chrysemys picta*	2	.09	1	1	1.4	.040	.01
Red-eared/Painted Turtle, *Chrysemys* sp.	2	.09	-	2	1.9	.058	.02
Red-eared/Painted/Map Turtle, *Chrysemys/Graptemys* sp.	1	.04	-	-	.7	.025	.01
FISH							
Bowfin, *Amia calva*	1	.04	1	1	(<.1)	--	--
Blue Catfish, *Ictalurus furcatus*	104	4.57	5	15	211.1	3.491	1.13
Blue/Channel Catfish, *Ictalurus* sp.	5	.22	2	3	3.7	.070	.02
Buffalo, *Ictiobus* sp.	24	1.05	7	10	10.6	.255	.08
Buffalo/Carpsucker, *Ictiobus/Carpiodes*	1	.04	1	1	.3	.012	.00
Black Bass, *Micropterus* sp.	1	.04	1	1	.3	.010	.00
Crappie, *Pomoxis* sp.	3	.13	2	2	1.1	.030	.01
Totals	2274	99.94	174	296	23,613.3	309.003	99.93

Waterfowl that live on open water as well as in the more sheltered sloughs and lakes of the floodplain include trumpeter swan, Canada goose, snow goose, bay ducks (*Aythya* spp.), and a single hooded merganser; all are migrants to the region. The bald eagle, a common migrant as well as a winter resident along the Mississippi River (Bohlen 1978:42), was identified from a distal humerus and a proximal radius (both from the right side) associated with Feature 12 and from a terminal foot phalanx recovered from Feature 15. Two crow bones might also reflect an aquatic environment if they are from the fish crow (*Corvus ossifragus*), which is an uncommon summer resident along the river's edge (Bohlen 1978:89).

Shallow ponds and sloughs are the preferred habitat for black bass as well as for certain turtles and birds identified at Laurens. These include the painted turtle and the red-eared turtle, both of which also inhabit the main river channel and permanent marshes on the floodplain. Wood duck, mallard/black duck, wigeon, teals, and most of the other dabbling ducks (*Anas* spp.) also prefer sloughs and lakes. Along with beaver, birds most commonly occurring in swamps and marshes include great blue heron, sandhill crane, bittern, and moorhen. The great blue heron is a year-round resident of the central Mississippi Valley. The bittern is an uncommon migrant and rare summer resident, and the common moorhen is present only during the spring and summer breeding season. The sandhill crane is a spring and fall visitor. The plovers, greater yellowlegs, and Hudsonian godwit in the assemblage would have been available during spring and late-summer–fall migrations along shorelines and on mud flats adjacent to pools on the floodplain.

Terrestrial Fauna

Most of the animal remains from Laurens (Table 2) reflect the importance of forest and forest-edge habitats. Formerly common in forested areas and timbered swamps, the black bear is represented by 26 elements. Forty-six percent of the identified bear specimens are from the feet (carpals, metapodials, and phalanges), bones that may have been affixed to the hides. This suggests that this large carnivore was harvested principally for its fur. Aside from three cranial elements (including one molar), the remaining bones reveal meat consumption and disposal similar to that documented for the Rhoads site by Parmalee and Klippel (1983:277). The French inhabitants of the region prized bear oil as a delicacy and used it for shortening and seasoning (Ekberg 1985:303). Also noteworthy is the anterior portion of a fisher, which was formerly present only in the northern part of Illinois (Hoffmeister and Mohr 1972:96). The possibility that the highly regarded fur bearer was once more widespread is indicated by finds at sites along the Mississippi and Illinois rivers (Parmalee 1958, 1960), in Indiana (Martin 1986), and at cave deposits in the Ozark Highlands of Missouri (Parmalee 1971). Human transport of fisher remains along trade routes could also account for its presence at early historic sites located outside its known modern range. Bones from opossum and raccoon suggest forested areas close to water, an impression that is compatible with bottomland-forest species such as gray squirrel, pileated woodpecker, and barred owl. Although aquatic birds are most numerous, wild turkey, an upland species that is available year-round, is also well represented. Other forest species include ruffed grouse and passenger pigeon.

Species such as cottontail rabbits and white-tailed deer prefer forest-edge habitats, which were favorite hunting grounds. Elk, which formerly inhabited wooded stream valleys and open woods as well as prairie margins, are represented by only one tooth—an upper canine that had been modified by humans. White-tailed deer, on the other hand, contributed more bones and individuals than any other mammal. Skeletal portions of deer (Table 3) suggest that preliminary butchering was usually conducted at the site of the kill rather than at the fort, for cranial elements and bones from the lower parts of the legs are underrepresented.

The most noticeable bones in the assemblage are those of large bovids, i.e., cattle and bison. Many early historic faunal assemblages from the Midwest and West present the problem of distinguishing cattle bones from those of bison. Despite morphological distinctions found on modern skeletal specimens (see Olsen 1960), the osteology of early North American breeds of cattle is poorly known. This issue is significant in interpreting the Laurens site, for bison roamed east of the Mississippi River into the eighteenth century and were exploited by Indians of the Illinois Confederacy along the Kaskaskia River and in the area between Vandalia and St. Louis as late as 1773 (Roe 1970:229). By comparing bovine elements to cattle and bison specimens housed in the Illinois State Museum osteology collection, 15 bones were identified as cattle. Only two bones, a left astragalus and left distal tibia with a closed epiphysis (both from Feature 1), are attributed to bison. Historically, bison have been reported in Illinois from the Hoxie Farm and Huber sites in Cook County (Michalik 1982), the Zimmerman site (Parmalee 1961; Cardinal 1975; Rogers 1975a, 1975b) in La Salle County, the Kingston Lake site near Peoria (Parmalee 1962), a mid-eighteenth

TABLE 3.

Distribution of White-Tailed Deer Skeletal Elements. (Numbers refer to numbers of specimens.)

	South Ditch		North Ditch			Pit Features						
Taxon	F1	F17	F5	Sub-total	%	F3	F12	F13	F15	F18	Sub-total	%
HEAD				4	2.1						16	4.8
Antler	0	0	0	0		0	0	1	0	0	1	
Cranium	1	0	1	2		0	1	3	7	0	11	
Mandible	0	0	0	0		0	1	1	0	0	2	
Isolated teeth	1	0	1	2		0	0	2	0	0	2	
AXIAL/TRUNK				93	48.9						138	41.1
Vertebra	10	3	5	18		1	3	3	15	0	22	
Sternum	0	0	0	0		0	0	2	2	0	4	
Rib	62	1	12	75		15	4	30	63	0	112	
PROXIMAL FOREQUARTER				36	18.9						62	18.5
Scapula	4	0	0	4		2	5	5	10	0	22	
Humerus	10	1	2	13		2	5	4	6	0	17	
Radius	9	0	4	13		2	2	2	9	0	15	
Ulna	5	0	1	6		1	3	2	2	0	8	

TABLE 3 (continued).

	South Ditch		North Ditch			Pit Features						
Taxon	F1	F17	F5	Sub-total	%	F3	F12	F13	F15	F18	Sub-total	%
DISTAL FOREQUARTER				3	1.6						4	1.2
Carpal	2	0	1	3		0	0	0	0	0	0	
Metacarpal	0	0	0	0		0	1	2	1	0	4	
PROXIMAL HINDQUARTER				46	24.2						104	31.0
Innominate	5	0	1	6		3	6	1	4	0	14	
Femur	12	0	5	17		3	6	10	15	0	34	
Patella	0	0	1	1		0	0	5	3	0	8	
Tibia	15	1	6	22		6	15	12	15	0	48	
DISTAL HINDQUARTER				6	3.2						7	2.1
Tarsal	6	0	0	6		1	2	1	2	0	6	
Metatarsal	0	0	0	0		0	0	0	1	0	1	
DISTAL APPENDAGE				2	1.1						5	1.5
Metapodial	0	0	0	0		0	0	0	0	0	0	
Phalange	0	1	1	2		0	2	0	2	1	5	
Totals	142	7	41	190	100.0	36	56	86	157	1	336	100.2

century French occupation at the Cahokia Wedge site in St. Clair County (Martin 1988), and at the early eighteenth-century Illini occupation at the Naples-Abbott site in Scott County (Styles et al. 1987). These records are significant since bison had virtually disappeared from Illinois by the early years of the nineteenth century (Hoffmeister and Mohr 1972:205).

An additional 424 elements are listed as cattle/bison in Table 2, but these are most likely cattle based on (1) undiagnostic morphological similarities to modern cattle and (2) the ratio of diagnostic cattle bones at the site to those from bison. The skeletal composition of cattle, bison, and cattle/bison bones (Table 4) presents a balanced distribution among cranial parts, ribs and vertebrae, proximal appendages, and distal extremities. In contrast to the white-tailed deer remains at Laurens, the pattern for large bovids suggests that the animals were killed, processed, and consumed at the site. Belting (1948:56) states that in the French settlements near Kaskaskia, cattle were the most useful domesticated animals because they were raised for milk and meat and also used as draft animals. Working animals were grazed on common grounds near the settlement, while breeding stock was kept away from the village, on a peninsula near the Mississippi in the case of Kaskaskia.

A census of animals at Fort de Chartres II in 1732 shows that swine constituted 56% of the livestock, cows 18.1%, oxen 17.2%, and horses 8.8% (Belting 1948:38). Despite their abundance in the census, a discrepancy appears in the archaeological assemblage in that swine rank behind cattle and cattle/bison in NISP, MNI, and contributed biomass. This may be due in part to the practice of allowing the animals to forage for themselves. Although the skeletal composition of the swine sample (Table 5) is similar to that for cattle/bison (Table 4), proportions of elements from the cranium and the feet are slightly greater in the total assemblage.

The remains of another domesticated mammal, the house cat, appear at Laurens. A left and right femur were recovered from Feature 5 and a maxilla fragment from Feature 13. No cut marks or modifications are present on these remains, and it seems likely that cats were brought to the fort in order to keep the rodent populations in check. House cat bones have also been recovered from French colonial contexts at Fort Ouiatenon (Martin 1986). Domestic chicken bones are also numerous at Laurens.

TABLE 4.

Distribution of Cattle and Cattle/Bison Skeletal Elements. (Numbers refer to numbers of specimens.)

	South Ditch		North Ditch			Pit Features						
Taxon	F1	F17	F5	Sub-total	%	F3	F12	F13	F15	F18	Sub-total	%
HEAD				50	23.4						56	24.9
Cranium	20	0	1	21		2	12	4	5	0	23	
Mandible	9	1	2	12		3	3	1	1	0	8	
Isolated teeth	12	2	3	17		2	2	4	14	0	22	
Hyoid	0	0	0	0		0	0	0	3	0	3	
AXIAL/TRUNK				60	28.0						100	44.4
Vertebra	27	0	6	33		14	12	8	25	0	59	
Sternum	1	0	0	1		0	0	0	1	0	1	
Rib	17	1	8	26		7	18	7	8	0	40	
PROXIMAL FOREQUARTER				13	6.1						25	11.1
Scapula	9	0	0	9		2	2	0	4	0	8	
Humerus	0	0	1	1		3	1	0	3	0	7	
Radius	1	0	1	2		2	0	2	1	0	5	
Ulna	0	1	0	1		0	0	1	3	1	5	

TABLE 4 (continued).

Taxon	South Ditch		North Ditch			Pit Features						
	F1	F17	F5	Sub-total	%	F3	F12	F13	F15	F18	Sub-total	%
DISTAL FOREQUARTER				11	5.1						2	0.9
Carpal	5	0	2	7		0	0	1	0	0	1	
Metacarpal	4	0	0	4		0	1	0	0	0	1	
PROXIMAL HINDQUARTER				27	12.6						28	12.4
Innominate	4	2	2	8		1	1	3	1	0	6	
Femur	5	0	8	13		7	4	3	0	0	14	
Patella	2	0	0	2		2	1	0	2	0	5	
Tibia	4	0	0	4		1	1	0	1	0	3	
DISTAL HINDQUARTER				14	6.5						11	4.9
Tarsal	6	0	1	7		5	2	0	0	1	8	
Metatarsal	6	0	1	7		2	0	0	1	0	3	
DISTAL APPENDAGE				39	18.2						3	1.3
Metapodial	2	0	0	2		0	0	0	0	0	0	
Sesamoid	8	0	1	9		0	0	1	0	0	1	
Phalange	26	0	2	28		0	0	0	2	0	2	
Totals	168	7	39	214	99.9	53	60	35	75	2	225	99.9

TABLE 5.

Distribution of Pig Skeletal Elements. (Numbers refer to numbers of specimens.)

Taxon	South Ditch		North Ditch			Pit Features						
	F1	F17	F5	Sub-total	%	F3	F12	F13	F15	F18	Sub-total	%
HEAD				18	23.1						32	35.2
Cranium	1	2	2	5		0	1	1	5	0	7	
Mandible	1	0	3	4		2	1	0	3	0	6	
Isolated teeth	4	1	4	9		3	0	6	10	0	19	
AXIAL/TRUNK				17	21.8						9	9.9
Vertebra	2	0	0	2		0	1	0	4	0	5	
Sternum	0	0	0	0		0	0	0	0	0	0	
Rib	15	0	0	15		0	2	0	2	0	4	
PROXIMAL FOREQUARTER				6	7.7						13	14.3
Scapula	0	0	1	1		0	0	0	0	0	0	
Humerus	0	0	1	1		2	0	1	0	1	4	
Radius	1	0	0	1		0	1	1	2	0	4	
Ulna	3	0	0	3		1	3	0	1	0	5	
DISTAL FOREQUARTER				3	3.8						9	9.9
Carpal	2	0	0	2		0	0	1	0	0	1	
Metacarpal	1	0	0	1		1	2	3	2	0	8	

TABLE 5 (continued).

Taxon	South Ditch		North Ditch			Pit Features						
	F1	F17	F5	Sub-total	%	F3	F12	F13	F15	F18	Sub-total	%
PROXIMAL HINDQUARTER				10	12.8						15	16.5
Innominate	4	0	0	4		0	2	0	0	0	2	
Femur	2	1	0	3		1	4	0	0	0	5	
Patella	0	0	0	0		0	0	0	0	0	0	
Tibia	1	1	0	2		0	4	1	1	0	6	
Fibula	1	0	0	1		0	0	1	1	0	2	
DISTAL HINDQUARTER				10	12.8						4	4.4
Tarsal	4	0	0	4		0	0	0	1	0	1	
Metatarsal	4	0	2	6		0	0	3	0	0	3	
DISTAL APPENDAGE				14	17.9						9	9.9
Metapodial	2	0	0	2		0	0	2	3	0	5	
Phalange	11	0	1	12		0	0	4	4	0	4	
Totals	59	5	14	78	99.9	10	21	24	35	1	91	100.1

Recovery Biases

Because small-scale recovery techniques were not employed during the 1983 fieldwork at the Laurens site, there is some uncertainty about how representative the faunal assemblage is. In order to address this concern, approximately 180 l of sediment was collected from five features during the course of the 1984 investigations. Through the cooperation of Dr. Steven Ahler and with the assistance of Kathryn C. Egan, these soil samples were processed by water-screening through 6.4-mm (0.25-inch) and 1.6-mm (0.063-inch) mesh screen at the facility established for the Illinois State Museum and University of Wisconsin at Milwaukee excavations at the Modoc Rock Shelter.

A total of 609.4 g of faunal remains was obtained from these samples. Only identified elements were quantified, the objective being to check for taxa that were either underrepresented or not recovered by routine field-recovery techniques. Table 6 contains a summary of the results. Small gastropods and bird eggshell fragments are present in all samples. Although the gastropods have not yet been analyzed, the species present may provide information on the nature of eighteenth-century vegetation at the site. The highest densities of animal remains were in Feature 1 and Feature 15. The only taxa unique to the water-screen assemblage are rodents and paddlefish. The skeleton of the paddlefish is largely cartilaginous, and the fish was identified from nine isolated spicules that originate on the fish's snout. Sizes of buffalo and catfish were similar to those identified in the macrorecovery assemblage. Over 200 fish scales were obtained, and most were ctenoid scales characteristic of larger centrarchid fish (sunfish family) such as largemouth bass. Quantitative comparison of the two collections suggests that macrorecovery techniques introduce certain biases. Whereas fish contribute only 6.1% of the identified specimens collected by dry-screening, fish bones (excluding scales) constitute 26.1% of the elements identified from water-screening. The disparity is not so great for bird bones, with 55.7% coming from the water-screening compared to 40.1% from the dry-screening. The low representation of identifiable elements from large-bodied mammals in water-screen samples contributes to these proportional differences.

Modification of Bone

Examination of animal remains for natural modification revealed few bones that had been chewed by carnivores, and even fewer that showed signs of gnawing by rodents (Table 7). The largest proportion

TABLE 6.

Composition of Water-Screen Faunal Assemblage. (NISP)

	South Ditch	Pit Features				
Taxon	F1	F3	F12	F13	F15	Totals
MAMMALS						
cf. Old World Rat, *Rattus* sp.	1	-	-	-	-	1
Unidentified Small Rodent, *Cricetidae*	1	-	-	-	10	11
Pig, *Sus scrofa*	1	-	-	-	-	1
White-tailed Deer, *Odocoileus virginaianus*	2	-	-	-	1	3
BIRDS						
Canada Goose, *Branta canadensis*	-	-	-	-	2	2
Snow/Canada Goose, *Chen caerulescens/Branta canadensis*	-	-	1	-	-	1
Mallard/Black Duck, *Anas platyrhynchos/rubripes*	-	-	-	1	-	1
Dabbling Ducks, *Anas* spp.	1	-	-	-	-	1
Blue-/Green-winged Teal, *Anas discors/ crecca*	2	1	-	-	1	4
Bay Duck, *Aythya* spp.	1	-	-	-	-	1
Unidentified Small Duck, Anatinae	1	-	2	1	-	4
Unidentified Duck, Anatinae	2	1	1	1	19	24
Domestic Chicken, *Gallus gallus*	-	-	-	-	1	1
Chicken/Prairie-Chicken, *Gallus gallus/ Tympanuchus cupido*	1	-	-	-	-	1
Wild Turkey, *Meleagris gallopavo*	1	-	-	-	-	1
Unidentified Shorebird, Charadriiformes	2	-	1	1	-	4
Passenger Pigeon, *Ectopistes migratorius*	4	-	-	-	-	4

TABLE 6 (continued).

Taxon	South Ditch	Pit Features				
	F1	F3	F12	F13	F15	Totals
FISH						
Paddlefish, *Polyodon spathula*	9	-	-	-	-	9
Blue/Channel Catfish, *Ictalurus furcatus/punctatus*	5	-	-	-	2	7
Buffalo, *Ictiobus* spp.	5	1	-	1	-	7
Scales	148	3	-	31	35	217
Totals	187	6	5	36	71	305
Total Identified	39	3	5	5	36	88
Volume (l)	14.0	32.0	9.5	43.4	41.7	180.7
Weight (g)	230.8	24.4	8.0	25.2	321.0	609.4
Density (g/l)	16.5	0.8	0.8	0.6	7.7	3.4

TABLE 7.

Burning and Gnawing on Faunal Remains. (NISP, number of identified specimens.)

	South Ditch		North Ditch	Pit Features				
	F1	F17	F5	F3	F12	F13	F15	F18
BURNING: [burned black/calcined]								
Mammal	4/135	1/7	1/10	5/29	1/1	1/28	18/59	0/0
% Mammal NISP	12.0	18.2	2.8	11.5	0.6	4.2	5.4	-
Bird	0/2	0/0	0/0	0/0	0/0	0/5	0/9	0/0
% Bird NISP	0.8	-	-	-	-	1.3	1.6	-
Turtle	-	-	-	0/0	0/0	0/0	0/0	0/0
Fish	0/0	0/0	0/0	0/0	0/0	0/0	0/0	-
Unidentified Vertebrate	0/0	-	-	0/0	0/0	0/0	0/0	-
Totals	141	8	11	34	2	34	86	0
%	9.3	11.9	2.5	7.9	.4	3.1	4.2	-
GNAWING								
Carnivore	1	0	2	3	9	2	6	0
Rodent	0	0	0	1	0	1	0	0

of gnawed bones occurred in Feature 12 (1.8%). Less than 1% of the bones in the other features were gnawed. Although most often observed on mammal bones, carnivore damage was also noted on three bird bones: a Canada goose sternum and a turkey humerus from Feature 12 and a turkey coracoid from Feature 15. At the Laurens site, gnawing appears most frequently on deer bones (13 specimens; proximal and distal humerus, proximal and distal femur, proximal and distal tibia, innominate bone, and first phalanx). Elements from cattle/bison (five bones) and swine (two bones) also exhibit carnivore modification. Rodent gnawing was noted on only one unidentified mammal bone from Feature 3 and on a chicken coracoid from Feature 13. The paucity of gnawed bones usually reflects rapid burial of refuse, which may suggest planned as opposed to random disposal.

Cultural modification includes burning, signs of skinning and butchering, and manufacture of artifacts from animal bones. Bones that had been exposed to fire are restricted to mammals and birds (Table 7). Just over 90% of the recovered burned bone was calcined white resulting from intensive incineration, and most of these were small pieces of unidentified mammal bones. The greatest proportions occurred in Features 1, 3, and 17. Bones intentionally or unintentionally modified by humans are listed in Table 8. Chopped bone in most cases reflects dismemberment of carcasses during butchering, whereas cut marks result from hide or skin removal, separation of two bones at the point of articulation (e.g., head of a femur and the acetabulum portion of the innominate), or from filleting meat from a bone.

The rare incidence of sawed bones is characteristic of eighteenth-century sites in the Midwest. Instead of saws, axes or hatchets were employed for most butchering. Green staining, especially noteworthy in Feature 13, is caused by contact with copper salts and in most incidences is an accident of deposition. The faunal analysis revealed a bone cutlery handle in Feature 15, a polished upper canine from an elk in Feature 13, and a cut and polished fragment of either deer or elk antler in Feature 3. None of the turtle carapace fragments exhibit the scraped interior surfaces that indicate the carapaces were used as bowls or rattles. Additional bone and shell artifacts described in Chapter 4 include buttons; a gaming die; fragments of a comb; a small, threaded, cylindrical handle fragment; and a small, flat, perforated object of unknown function.

Another form of bone alteration results from disease or injury to the animal. The Laurens site produced three examples of pathologies. The proximal radius of a trumpeter swan found in Feature 15 shows indications of traumatic injury to the wing followed by remodelling of the

TABLE 8.

Culturally Modified Animal Remains.

Provenience	Taxon	Element	Modification	N
Feature 1	Deer	Distal humerus	Cut marks	1
	Cattle/Bison	Innominate	Chopped	1
	Cattle/Bison	Mandible	Chopped	1
	Cattle/Bison	Phalanx 1	Chopped	1
	Cattle/Bison	Rib	Chopped	2
	Cattle/Bison	Phalanx 1	Cut marks	1
	Unidentified mammal	Unidentified	Comb fragments	2
	Unidentified mammal	Unidentified	Gaming die	1
	Unidentified mammal	Unidentified	Small, flat object with perforation	1
Feature 2	Unidentified mammal	Unidentified	Buttons	3
Feature 3	Chicken	Scapula	Green stain	1
	Cattle	Calcaneus	Chopped	2
	Cattle/Bison	Innominate	Cut marks	1
	Cattle/Bison	Rib	Chopped	1
	Cattle/Bison	Lumbar vertebra	Sawed	1
	Deer	Radius	Chopped	1
	Deer	Rib	Cut marks	1
	Deer	Distal tibia	Cut marks	1
	Deer/elk	Antler	Cut, polished	1
Feature 3/4	Unidentified mammal	Unidentified	Cylinder (Handle?)	1
Feature 5	Cattle/Bison	Distal femur	Chopped	1
	Cattle/Bison	Proximal femur	Sawed	1
	Cattle/Bison	Distal humerus	Sawed?	1
	Cattle/Bison	Ribs	Cut marks	4
	Mussel	Shell	Button	1
Feature 11	Unidentified mammal	Unidentified	Button	1
Feature 12	Cattle/Bison	Frontal	Chopped	1
	Cattle/Bison	Occipital condyle	Sawed?	1
	Cattle/Bison	Distal femur shaft	Cut marks	1
	Cattle/Bison	Proximal femur shaft	Cut marks	1

TABLE 8 (continued).

Provience	Taxon	Element	Modification	N
	Cattle/Bison	Ribs	Chopped	5
	Cattle/Bison	Distal tibia	Chopped	1
	Cattle/Bison	Lumbar vertebra	Cuts, chopped	1
	Deer	Ilium	Green stain	1
	Deer	Innominate	Cut marks	1
	Deer	Tibia shaft	Chopped	1
	Pig	Proximal femur shaft	Cut marks	1
	Pig	Tibia shaft	Cut marks	1
Feature 13	Canada goose	Coracoid	Green stain	2
	Canada goose	Proximal humerus	Green stain	1
	Canada goose	Rib	Green stain	1
	Canada goose	Scapula	Green stain	1
	Canada goose	Synsacrum	Green stain	1
	Trumpeter swan	Scapula	Cut marks	1
	Cattle/Bison	Innominate	Chopped	1
	Cattle/Bison	Rib	Chopped	1
	Cattle/Bison	Rib	Cut marks	2
	Elk	Canine tooth	Polished	1
	Deer	Distal radius	Chopped	1
	Deer	Distal tibia	Cut marks	1
	Pig	Metapodial 2/5	Sawed	1
Feature 15	Teal	Distal humerus	Cut marks	1
	Unidentified Duck	Furculum	Cut marks	1
	Canada goose	Vertebra	Green stain	1
	Trumpeter swan	Scapula	Cut marks	1
	Blue catfish	Pectoral spine	Cut marks	1
	Cattle/Bison	Hyoid	Cut marks	1
	Cattle/Bison	Scapula	Chopped	1
	Cattle/Bison	Thoracic vertebra	Chopped	2
	Deer	Innominate	Chopped	1
	Bear	Distal ulna	Chopped	1
	Unidentified mammal	Unidentified	Bone handle	1
Feature 17	Blue catfish	Hyomandibular	Cut marks	1
	Cattle/Bison	Rib	Chopped	1

broken bone. Two deer bones from Feature 1 display different anomalies. The condyles on a distal metatarsal has spicules of new bone ("lipping") around the point of articulation with the first phalanx. A proximal deer radius from the same feature also exhibits excessive bone growth.

Intrasite Distributions and Comparisons

> Unless one is certain that most refuse was discarded in one locus or that all faunal remains were treated in a similar fashion, it is unwise to assume that the remains from a single locus accurately reflect human preparation, consumption, and disposal behavior from the site as a whole. [Price 1985:55]

Does the faunal assemblage from the Laurens site represent a uniform pattern of refuse disposal from all areas of the site, or do some deposits reflect differences among site inhabitants (ethnic, occupational, or status), special activity areas, or temporal factors? Excavations at the site, although very limited, have revealed palisade ditches, refuse pits, and building cellars. The materials associated with these three contexts were examined closely, in the hope of learning something about past human behavior at the site.

Consideration of the species composition of the various features reveals only subtle differences between palisade-ditch and pit-feature contexts (Table 9). There are no significant differences in the proportions of bones from deer, cattle/bison, and swine. Attention to skeletal portions suggests virtually no differences for deer except that Feature 12 has smaller proportions of vertebrae and ribs than the other features (Table 3). Although distributions of cattle/bison anatomical parts are similar, there are greater proportions of distal leg bones in the palisade ditches than in pit contexts, and ribs and vertebrae are better represented in pits than in the ditches (Table 4). No meaningful differences can be demonstrated for swine (Table 5). Although bear bones were recovered from both contexts, they are most numerous in Features 1 and 3.

Fish bones constitute only a slightly higher proportion in the palisade ditches than in the pits (Table 9). Interesting is the occurrence of turtle remains only in the pit features, while beaver remains were recovered only from the palisade ditches. More significant, however, is the distribution of bird bones. Features 13 and 15, both thought to have been cellars inside the perimeter of the fort, contained 50% or more

TABLE 9.

Distribution of Animal Remains from the Eighteenth-Century Component. [NISP (MNI); numbers in brackets are MNI not included in MNI total.]

	South Ditch		North Ditch	Pit Features				
Taxon	F1	F17	F5	F3	F12	F13	F15	F18
MAMMALS								
Opossum	1(1)	-	-	1(1)	-	1(1)	3(1)	-
Cottontail	1(1)	-	2(1)	-	-	-	1(1)	-
Gray Squirrel	-	-	1(1)	-	-	5(1)	5(3)	-
Beaver	6(1)	-	2(1)	-	-	-	-	-
Dog/Coyote	1(1)	-	-	-	-	-	-	-
Canidae	-	-	-	1(1)	-	-	-	-
Black Bear	10(2)	-	1(1)	6(2)	1(1)	3(1)	5(1)	-
Raccoon	1(1)	-	-	-	-	8(1)	-	-
Fisher	1(1)	-	-	-	-	-	-	-
Domestic Cat	-	-	2(1)	-	-	1(1)	-	-
Pig	59(4)	5(1)	14(3)	10(2)	21(3)	24(2)	35(2)	1(1)
Elk	-	-	-	-	-	1(1)	-	-
White-tailed Deer	142(5)	7(1)	41(3)	36(4)	56(4)	86(3)	157(6)	1(1)
Cervidae	-	-	-	1(-)	1(-)	-	-	-
Bison	2[1]	-	-	-	-	-	-	-
Cattle	3[1]	-	2[1]	9(3)	1[1]	-	-	-
Cattle/Bison	165(3)	7(1)	37(4)	44[2]	59(2)	35(3)	75(3)	2(1)
Total Identified	392	19	102	108	139	164	281	4
Unidentified Mammal	771	25	284	188	187	532	1144	1

TABLE 9 (continued).

Taxon	South Ditch		North Ditch	Pit Features				
	F1	F17	F5	F3	F12	F13	F15	F18
BIRDS								
American Bittern	1(1)	-	-	-	-	-	-	-
Great Blue Heron	1(1)	-	-	-	-	-	-	-
Trumpeter Swan	8(2)	2(2)	2(1)	6(1)	2(1)	10(2)	22(2)	-
Anserinae, Swan/Goose	-	-	-	1(-)	-	-	-	-
Snow Goose	-	-	-	1(1)	24(2)	-	-	-
Canada Goose	23(4)	1(1)	4(1)	8(1)	6(2)	50(5)	42(3)	-
Snow/Canada Goose	3(-)	-	1(-)	2(-)	-	-	-	-
Wood Duck	-	-	-	-	-	-	1(1)	-
Mallard/Black Duck	-	-	-	1(1)	6(1)	7(2)	11(3)	-
American Wigeon	-	-	-	-	-	-	1(1)	-
Anas spp.	-	-	-	1(1)	-	-	1(1)	-
Blue-/Green-winged Teal	3(1)	-	-	8(2)	7(1)	4(1)	26(3)	-
Unidentified Dabbling Duck	5(2)	-	-	5(-)	1(1)	10(2)	13(6)	-
Bay Duck, *Aythya* spp.	-	-	-	-	-	-	3(1)	-
Bufflehead	1(1)	-	-	-	-	-	-	-
Hooded Merganser	-	-	-	-	-	1(1)	-	-
Unidentified Small Duck	5(-)	-	-	-	1(1)	3(-)	23(3)	-
Unidentified Duck	49(6)	-	13(3)	1(-)	21(3)	34(3)	147(6)	-
Bald Eagle	-	-	-	-	2(1)	-	1(1)	-
Hawk, *Buteo* sp.	3(1)	-	-	-	-	-	1(1)	-
Domestic Chicken	2(1)	6(3)	3(1)	22(3)	3(2)	37(5)	21(3)	1(1)

TABLE 9 (continued).

Taxon	South Ditch		North Ditch	Pit Features				
	F1	F17	F5	F3	F12	F13	F15	F18
Ruffed Grouse	-	-	-	-	-	1(1)	-	-
Chicken/Prairie-Chicken	-	-	-	-	-	-	3(-)	-
Wild Turkey	35(3)	2(1)	5(2)	6(2)	12(3)	20(4)	18(3)	-
Turkey/Chicken	-	-	-	-	-	1(-)	-	-
Common Moorhen	1(1)	-	-	-	-	-	-	-
Sandhill Crane	15(3)	-	-	3(1)	5(2)	4(1)	5(1)	-
Plover, *Pluvialis* sp.	1(1)	-	-	-	7(2)	1(1)	-	-
Greater Yellowlegs	2(1)	-	-	-	-	-	-	-
Hudsonian Godwit	-	1(1)	-	1(1)	-	-	-	-
Passenger Pigeon	4(2)	1(1)	-	1(1)	1(1)	4(2)	13(3)	-
Barred Owl	-	-	-	-	-	-	2(1)	-
Pileated Woodpecker	-	-	-	-	-	-	1(1)	-
Crow	2(1)	-	-	-	-	-	-	-
Small Perching Bird	-	-	1(1)	-	-	-	-	-
Total Identified	164	13	29	67	98	187	355	1
Unidentified Bird	97	4	19	41	71	198	200	0
REPTILES								
Box Turtle	-	-	-	-	-	2(1)	-	-
Red-eared Turtle	-	-	-	-	1(1)	2(1)	2(1)	-
Painted Turtle	-	-	-	-	-	2(1)	-	-
Chrysemys sp.	-	-	-	1(1)	-	-	1(1)	-

TABLE 9 (concluded).

Taxon	South Ditch		North Ditch	Pit Features				
	F1	F17	F5	F3	F12	F13	F15	F18
Chrysemys/Graptemys	-	-	-	-	1(-)	-	-	-
Unidentified Turtle	-	-	-	-	-	-	1(-)	-
FISH								
Bowfin	-	-	-	-	-	1(1)	-	-
Blue Catfish	33(2)	6(1)	5(2)	2(2)	4(2)	4(2)	48(3)	2(1)
Blue/Channel Catfish	-	-	-	4(2)	1(1)	-	-	-
Buffalo	4(3)	-	-	12(3)	-	3(2)	5(2)	-
Buffalo/Carpsucker	1(1)	-	-	-	-	-	-	-
Black Bass	1(1)	-	-	-	-	-	-	-
Crappie	-	-	-	-	-	3(2)	-	-
Total Identified	39	6	5	18	5	11	53	2
Unidentified Fish	45	-	1	6	-	11	17	-
Unidentified Vertebrate	5	-	-	2	6	5	2	-
Totals	1513	67	440	431	508	1114	2056	8
Total Identified	595	38	136	194	244	368	692	7
% Identified	39.3	56.7	30.9	45.0	48.0	33.0	33.7	85.7
MNI Totals	58	13	26	36	36	54	68	5

bird bones each. In contrast, Feature 17, the ditch feature having the greatest proportion of bird bones, has only 34.2%. Furthermore, duck bones constitute 22.3% of the identified faunal remains from the pit features in contrast to only 9.9% from the palisade ditches. Blue-winged and/or green-winged teal bones and unidentified small duck (teal or bufflehead) bones were especially abundant in Feature 15. The disparate distribution of bird bones may signify differences in status for the inhabitants responsible for refuse deposited in Features 13 and 15.

Breakage patterns and modifications were also examined. Comparison of mean bone weight might disclose refuse differences related to secondary trash disposal, trampling, and sweeping. Table 10, however, suggests that no such contrast exists. Refuse deposited in pits, therefore, was similar in condition to refuse that accumulated in the palisade ditches. Although not abundant overall, collections from the palisade ditches tended to contain higher proportions of burned remains, especially Feature 17 and Feature 1 (Table 7). Together, 7.9% of all bones from the palisade trenches were burned compared to 3.8% from the pit features.

The faunal assemblages recovered from the various contexts investigated at Laurens undoubtedly reflect numerous episodes of trash disposal. Palisade ditches and cellars from abandoned structures may have contained butchering waste as well as kitchen refuse that may have accumulated over a considerable period of time. Where distinct patterns might have once been perceptible, these may have been diluted or masked by subsequent dumping episodes. Therefore, what may be demonstrated as *statistically* significant distinctions among various contexts may not necessarily reflect significant *behavioral* differences. Thus, there does not seem to be one satisfactory scenario to account for the faunal assemblages that have accumulated. The most conspicuous, and perhaps significant, pattern, however, is the greater proportions of bird bones, especially waterfowl, contained in the fill of the cellars, particularly in Feature 15. This suggests the tentative hypothesis that higher proportions of bird bones reflect the presence of households of higher status, although they may instead reflect changes in diet over time. Discovery and analysis of additional cellar features would be required in order to comment more authoritatively on this interesting issue. The higher incidence in the palisade ditches of charred faunal remains may also be meaningful. Other intrasite trends, such as the distributions of various species, skeletal portions, and bones by size, are more remarkable for their similarities than for their minor differences.

TABLE 10.

Average Weight of Bone for Selected Vertebrate Remains from Palisade Ditches and Refuse Pits. (Weight in grams.)

Taxon	Palisade Ditches	Pit Features
White-tailed deer	10.4	11.0
Cattle/Bison	32.5	33.3
Pig	9.3	8.6
Unidentified mammal	1.9	1.5
Wild turkey	2.9	2.7
Blue catfish	2.5	1.7

NINETEENTH-CENTURY CONTEXTS

Feature 2 is a refuse pit that contained artifacts from the early nineteenth century along with 176 animal remains (Table 11). As in the eighteenth-century features, white-tailed deer bones are most numerous, although domesticated animals, waterfowl, and wild turkey are also present. The only freshwater mussel shells recovered from Laurens are associated with Feature 2. The similarity in species composition to the eighteenth-century contexts coupled with the absence of sawed bones might reflect redeposition of eighteenth-century refuse into Feature 2 by later inhabitants of the site. In contrast to the undisturbed eighteenth-century refuse, a much greater proportion of the animal remains from this feature is burned (36.6%). Furthermore, instead of being calcined, 72.2% are burned black. Differential burning of discarded animal remains may indicate a difference in refuse-disposal practices at the Laurens site during different periods of occupation.

CONCLUSIONS

The Laurens site has provided the largest assemblage of animal remains from French colonial contexts to be analyzed and reported to date from the French Colonial District of Illinois. Not only has this collection documented the importance of local faunal resources to the eighteenth-century inhabitants of the American Bottom, but the presence of distinct patterns of butchering and animal utilization for deer, swine, and cattle/bison can be seen in analyzing skeletal proportions represented at the site. Attention to various excavated contexts (palisade ditches, refuse pits, and probable cellars) indicates that the most striking difference is the greater representation of bird bones, especially waterfowl, in the cellar fill. The somewhat higher rate of burned bones in the palisade ditches may also be significant. The local inhabitants tended to exploit forested habitats and the rich floodplain of the Mississippi River. In contrast to the local Indian pattern, however, the French at the Laurens site acquired their fish from the main river channel and seem to have been selectively pursuing large blue catfish.

TABLE 11.

Feature 2 Species Composition. (NISP, number of identified specimens; MNI, minimum number of individuals.)

Taxon	NISP (MNI)	Weight (g)	Biomass (kg)
MAMMALS			
Cottontail, *Sylvilagus floridanus*	1(1)	1.5	.038
Pig, *Sus scrofa*	8(2)	27.7	.523
White-tailed Deer, *Odocoileus virginianus*	42(2)	144.6	2.313
Cattle/Bison, *Bos/Bison*	12(2)	159.1	2.519
Unidentified Large Mammal	46(-)	171.6	2.698
Unidentified Medium/Large Mammal	3(-)	.7	.019
Unidentified Medium Mammal	4(-)	3.6	.083
BIRDS			
Canada Goose, *Branta canadensis*	6(1)	8.0	.135
Unidentified Duck, Anatinae	10(2)	5.3	.093
Domestic Chicken, *Gallus gallus*	1(1)	1.1	.022
Wild Turkey, *Meleagris gallopavo*	9(2)	18.2	.344
Unidentified Bird	31(-)	7.7	.136
FRESHWATER MUSSELS			
White Heel-splitter, *Lasmigona complanata*	1(1)	3.1	--
Unidentified Mussel	2(-)	1.7	--
Totals	176	553.9	8.923
Total Identified	91	368.6	5.987
% Identified	51.7	66.5	67.1

CHAPTER 6:
DISCUSSION AND CONCLUSIONS

This concluding chapter consists of three sections. The first addresses the issue with which the archaeological investigations began: Does the Laurens site contain the physical remains of an early French colonial fort, perhaps the original Fort de Chartres? The second is a discussion of the Laurens faunal assemblage in relation to patterns of animal exploitation represented at other French colonial sites in the Midwest. The third is a brief speculative section that discusses the potential for further archaeological research at the Laurens site.

TESTING THE HYPOTHETICAL MODEL FOR THE FIRST FORT DE CHARTRES

In comparing the artifacts and features found in 1983 and 1984 with the preconceived model of what physical evidence one would expect to find at the site of the first Fort de Chartres (see p. 23), the archaeological evidence strongly supports the hypothesis that the first fort was located at Laurens.

The exploratory excavations exposed a number of cultural features, including two parallel ditches exactly one French arpent (approximately 58.5 m) apart, with molds of a single line of posts in the clay ditch bottom at one location. Several large pit features lay between the two ditches. Both ditches and all but one of the pit features had been filled with trash that included many French artifacts dating between ca. 1720 and ca. 1770, as nearly as can be determined.

The two parallel trenches are of the right size and shape to be the archaeological remains of two palisade walls; indeed, no other explanation of their presence comes to mind. As they are located respectively at the grid north and south edges of the rectangular stain on the 1928 aerial photograph, the conclusion is inescapable that they mark the location of curtain walls on opposite sides of a square fort. If this interpretation is correct, the fort's east wall has been largely or entirely destroyed by the road that now runs across the east side of the site, and its west wall has been buried by, and probably partly destroyed by, the levee on the west side of the site.

It is important to note that the ditches could not have been filled with trash until the pales forming the curtain were removed, leaving an open ditch where the palisade had stood. The trash in the pit features, too, was almost certainly deposited when the pits lay open after the structures that presumably were originally associated with them had been removed or were no longer in use. Thus, the two palisade walls, as well as any structures that stood over or near the pit features, must date from a period *before* the trash was deposited in them.

With the exception of Feature 2, which contained mostly nineteenth-century artifacts, all the features that yielded identifiable artifacts produced eighteenth-century French items. The most diagnostic materials were ceramics, glass, gun parts, and brass buttons.

Decorated French faïence sherds (Figure 21) were mainly rim sherds with blue decorations in narrow bands, typical of what some experts have identified with the potteries of Rouen, France (Brain 1980; Noël Hume 1974). Specimens with identical motifs have been reported from many eighteenth-century French colonial sites in both Canada and the United States (Walthall and Benchley 1987:58). There also are several coarse earthenware sherds with a bright green translucent glaze that was applied over a thin white slip. This type occurs commonly in association with Rouen faïence at the same French colonial sites. Another kind of coarse earthenware, represented by a number of sherds from several features, has a brown lead glaze with dark streaks; it falls within the generic category of Rockingham/Whieldon and occurs commonly at eighteenth-century French colonial sites. The ceramics collection includes one tiny sherd of Hispanic majolica.

Numerous pale, blue green sherds of glass case bottles are typical of specimens commonly found at eighteenth-century French colonial sites in North America. Numerous wine-bottle fragments fit the pattern for either French or English bottles of the eighteenth century.

An iron trigger guard (Figure 27d) resembles one illustrated by Hamilton (1980:Figure 31) and identified as late-seventeen-century French. The proximal part of a bayonet from the plowzone in E.T. 2 (Figure 27c) is tentatively identified as an early eighteenth-century French style. Part of a brass trigger guard finial is identical to eighteenth-century French trade-gun finials (cf. Hamilton's types C and D). Several brass buttons like those worn by French soldiers and marines of the seventeenth and eighteenth centuries came from various features and places about the site. A lead bale seal has the word "CENTAVO" on one face (Figure 33a).

The eighteenth-century trash in the ditches and pits must have been deposited by French marines living in a later fort and/or colonists who lived in the village of Chartres, which developed around the first fort during the 1720s and survived until the 1760s (Briggs 1985:69–76, 338–342). It is possible that when the first fort was abandoned in 1725 or 1726 the developing village simply spread across the area, turning it from a military into a civilian site. Some features within the area enclosed by the palisade ditch may have been associated with non-military structures that were built after the palisade had been removed. This is almost certainly true of Feature 2, which contained largely nineteenth-century trash.

In any event, the artifacts date the palisade ditches to the first half of the eighteenth century or earlier. Since it is a well-documented fact that the French built at least two wooden-palisaded forts in the vicinity before 1750, we conclude that this was one of them.

Was this Boisbriant's fort built between 1719 and 1721? Was it the second French fort erected between 1725 and 1729? Was it some other fort? Although the archaeological investigations have not provided a clear answer, there are extant historical documents that can assist in limiting the options.

The French Companies of the Indies and of the West did not succeed in turning the colony of Louisiana into an economically viable enterprise. Consequently, in 1731 Louisiana became a crown colony that the French royal government administered directly (Alvord 1920:167). As a part of the transfer of authority in the Illinois Country from the Indies Company to the crown, French officials drafted a detailed inventory describing Fort de Chartres II, its interior structures, its equipment, and its supplies. This inventory, which was compiled in June 1732, is a valuable document for helping to determine the sequence of fort construction in the French Illinois Country.

The inventory of 1732 (AN, C13B, 1:1–8) describes the stockade of Fort de Chartres II as 25 toises (48.7 m) square with four bastions and constructed of stakes (*pieux*). Furthermore, when men were hired at Fort de Chartres in 1725 to set stakes for a new fort to supplant the first one (Brown and Dean 1977:843), the specifications for the project called for a double line of stakes for the palisaded curtain walls.

The combined documentary and archaeological evidence suggests that the subsurface features at the Laurens site are the remains of Boisbriant's fort built in 1719–1721. They clearly do not fit, in three important respects, the documentary description of the second fort. First, the structure at the Laurens site measured 58.5 m, substantially larger than the second fort, which was only 48.7 m wide according to the inventory of 1732. Second, the 1928 aerial photograph (Figure 2) shows what appears to be the outline of a fort at the Laurens site with two bastions at diagonally opposite corners. This corresponds with the description of Boisbriant's fort made by d'Artaguiette in 1723 but not with the second fort, which the official inventory of 1732 described as having four bastions. Third, the 1983 archaeological explorations revealed that the north curtain wall, at least, had only a single row of posts, in contrast to the second fort, which was said to have had double-palisaded curtain walls (Brown and Dean 1977:843)

Yet, once this conclusion has been set forth, it must be acknowledged that the palisaded structure at the Laurens site could be a later fort occupied during the 1730s or 1740s. Further excavations at the site, with detailed analysis of artifacts and features, may bring us closer to the solution of this important riddle of the Illinois Country.

REGIONAL COMPARISONS OF FAUNAL REMAINS

Regardless of whether French troops from a later fort or civilians deposited trash at the Laurens site, consideration of animal-exploitation practices in relation to other eighteenth-century French habitation sites in the Midwest indicates that adaptation to the New World frontier was not uniform. Instead, local subsistence patterns show considerable diversity. This diversity may extend beyond differences in local environmental settings to reflect social, cultural, and economic differences among specific sites (Martin 1986). At Fort de Chartres, for example, documents reveal the importance of agriculture to the local French economy, and faunal remains from Laurens indicate a primary reliance on domesticated livestock. In contrast, the emphasis on wild-animal resources at Fort Ouiatenon, an eighteenth-century fur-trading post in the Wabash River valley near present-day Lafayette, Indiana, is more reminiscent of local Indian groups (Martin 1986).

In order to explain similarity and variability in artifact assemblages, Tordoff (1983) has viewed French colonial sites in North America as a network that consisted of hierarchically organized entrepots, each of which operated at different levels of functional complexity. According to this model, *regional distribution centers* were established at strategic locations along primary transportation routes to serve as gateways for the commerce of furs and other resources. As regional bases for government and business representatives, these posts served as military headquarters as well as provision depots for more remote posts. *Local distribution centers*, on the other hand, were established near one or more Indian villages where they became small enclaves for *voyageurs*, traders, and their families. Soldiers, if present at all, were mainly for appearance. Interaction between the French inhabitants and local Indians at these posts was more intimate. Although affected by many of the same factors as the regional centers, the remoteness of the local centers limited their functions in the network hierarchy (Tordoff 1983:140). Using a somewhat different perspective, Keene (1988) proposes that this functional complexity represents a dichotomy between the economic pursuits of *extraction* (e.g., the fur trade and commercial fishing) and *production* (i.e., agriculture) at French colonial sites.

Diversity among various archaeological faunal assemblages from eighteenth-century French colonial sites can also be inspected in light of these models. Fort Ouiatenon (1717–1791), along with trading posts in the Wabash Valley at Fort Miamis (Fort Wayne, Indiana) and Vincennes, Indiana, is an example of Tordoff's local distribution center. The post was inhabited by a small detachment of French marines and fewer than twenty French families; there was also a large Indian population (including the Wea, Piankashaw, Kickapoo, and Mascouten) residing at five villages in the vicinity (Kellar 1970; Noble 1983; Tordoff 1983). In contrast to Laurens, domesticated animals were important at Fort Ouiatenon only as a supplement to wild mammals (especially white-tailed deer and raccoon), birds (wild turkey in particular), and riverine fish (Martin 1986). For all techniques of quantification, domesticated animals as a group, and domesticated mammals considered as individual species, were more abundant at Laurens than at Fort Ouiatenon (Figure 34). The proportions of identifiable birds and fishes, however, are quite similar.

The respective faunal assemblages also seem to reflect differences in the nature of social interaction between the French inhabitants of each site and their respective Indian neighbors. Virtually all of the modified faunal remains from Laurens (e.g., cutlery handles, buttons, combs, and die) are of European manufacture. In contrast, the Ouiatenon collection contains numerous examples of modified animal remains that would not be out of place at an aboriginal population center. These include turtle carapaces that were modified into bowls and/or rattles, a perforated black bear mandible, an awl made from a bear fibula, a bird bone tube, bone projectile points, and numerous pieces of cut deer antlers. Acculturation of the French to Indian lifeways may also be indicated at Ouiatenon by the diverse assemblage of freshwater mussels, the use of turtles for food, and the numbers of bones from small passerine songbirds. The extractive function of Fort Ouiatenon throughout most of its occupation—its close involvement with the

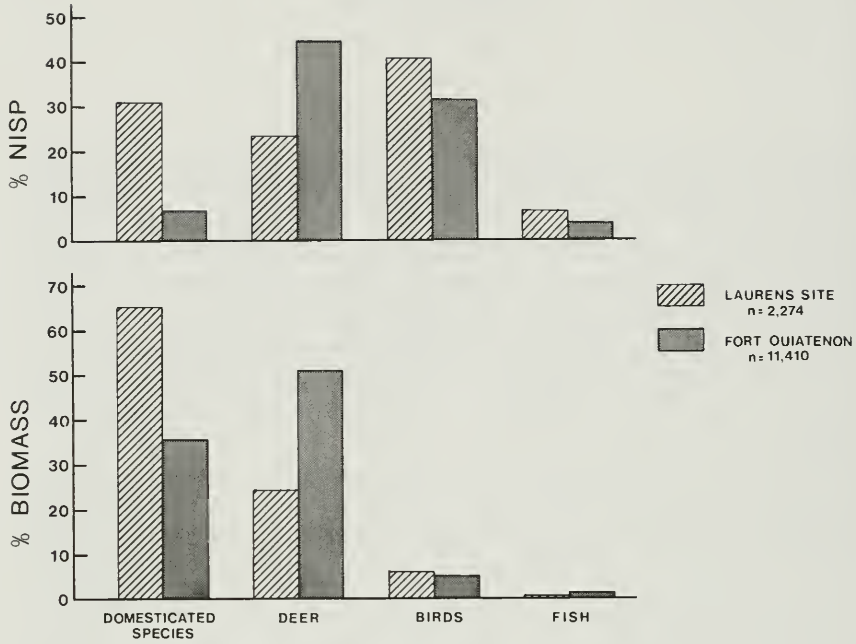

Fig. 34. Comparison of selected vertebrate animal remains from Laurens and Fort Ouiatenon (percentages refer to vertebrates only).

Indian fur trade—suggests that Europeans and Indians interacted intimately at the outpost. French-Canadian marriages to Indian women imply that Indians as well as *métis* resided at the post. The manifestation of Indian food preferences and food-preparation techniques may also signify social contacts with Indian relatives. At Laurens, the absence of mussel shells, turtle-carapace bowls, and other native artifacts seems to reflect an economy oriented more toward agricultural production than extraction of local resources.

The distinctive animal-exploitation pattern represented in northern Michigan at Fort Michilimackinac (Scott 1985) may also reflect that post's original extractive role as a local distribution center, a role that lasted until the 1730s (Scott 1985:26). Although a greater reliance on domesticated animals might eventually be demonstrated by additional faunal samples from the period 1744 to 1763, when the fort functioned as a regional distribution center, the unique environmental setting of the Straits of Mackinac must also be considered. The mixed conifer and deciduous forest of the Canadian biotic province was unfavorable to large populations of white-tailed deer and other game animals. The inland-shore fishery (Cleland 1982; Rostlund 1952), however, offered an abundant seasonal resource, and this resource was exploited at the northern French fort. Fish (mainly lake trout and whitefish) contributed from 15% to 86% of the meat represented in several early midden deposits (Scott 1985:154–155). Other wild-animal resources (e.g., beaver, various mustelids, passenger pigeon, and waterfowl) were also important.

Within the French Colonial District of southern Illinois, the various eighteenth-century sites from which faunal collections have been analyzed reveal considerable variability in animal-exploitation practices. Over 400 animal remains from the Cahokia Wedge site (11-S-743) in St. Clair County were associated with wall trenches from a *poteaux-en-terre* structure, a refuse pit, a limestone concentration, and a discrete midden area (Martin 1988). Documentary evidence suggests that these features are remnants of a residence occupied by Etienne Nicolle sometime between 1758 and 1766. Although cattle, swine, and domestic chickens are represented, the sample indicates a preference for white-tailed deer. Bison, black bear, beaver, waterfowl, marsh birds, aquatic turtles, and large fish from the main river channel were also exploited. Similar to Laurens is the presence of trumpeter swan, sandhill crane, and exceptionally large blue catfish.

Despite the importance of deer and other wild game (e.g., muskrat, raccoon, black bear, and waterfowl) to the Kaskaskia and Michigamea inhabitants of the Waterman site near Fort de Chartres (Parmalee and

Bogan 1980), the Indian population there made greater use of backwater lakes and sloughs to obtain fish than did the French inhabitants at the Laurens site. Aquatic turtles were also more abundant than at Laurens or Cahokia Wedge. In contrast to Fort Ouiatenon, however, the turtle carapaces were not modified.

Over 3,000 animal remains recovered from the fill of five drains and a British-period latrine at Fort de Chartres III (11-R-127) have also recently been analyzed (Martin and Masulis 1988). In common with Laurens and Cahokia Wedge, these samples from the third fort demonstrate the importance of domesticated mammals, especially cattle and swine. White-tailed deer also played a significant but supplemental role. Fish consist of very large blue catfish and buffalo. Waterfowl and sandhill crane are also well represented. Red-eared turtles (also referred to as sliders) occur in nearly all samples, but are especially abundant in the British feature. Unfortunately, none of the French-period contexts investigated to date at the stone fort seem to have escaped the contamination of refuse from later military and civilian occupations. Although this may not seriously hinder studies of various artifact categories, interpretation of human subsistence patterns is dependent on the unequivocal association of animal and plant remains with discrete temporal and cultural contexts.

Although variability has been encountered among faunal assemblages obtained from several eighteenth-century French colonial sites that have been investigated in the midwestern United States, interpretation of these differences is hampered by problems of context. This is especially true at the Laurens site, where it is likely that most of the refuse that was used to fill palisade ditches, cellars, and trash pits was deposited sometime after Fort de Chartres I was abandoned. As a consequence, it is not yet possible to demonstrate if or how animal-exploitation patterns in the American Bottom changed over time during the succession of French, British, and American occupations. A clear dichotomy exists, however, between the materials recovered from the Laurens site and those from Fort Ouiatenon. The artifact assemblage from Laurens contains a greater proportion of high-status items, a finding which Tordoff (1983) predicted should be expected for French colonial sites that functioned as regional distribution centers. In this case, the contrast may also portray an expanding French civilian occupation that replaced the military garrison on the site of the initial Fort de Chartres. In any case, the contrasting animal-exploitation patterns at Laurens and Fort Ouiatenon seem to validly reflect differing social structures at these sites, as well as the difference between a small, remote trapping-and-trading outpost on the Wabash River and a larger, more sedentary, agricultural population located in the American Bottom region of the Mississippi Valley.

POTENTIAL FOR FURTHER RESEARCH

Although the stockaded perimeter of Boisbriant's fort had been completed by 1721, the interior structures had not been. In May 1723, for example, the Company of the Indies hired one Sieur Bienvenu, a master joiner, to build, within the walls of the fort, a substantial structure. Although the dimensions were not specified in Bienvenu's contract (Brown and Dean 1977:809–810), the building was to have two floors, with four offices and glass casement windows with shutters. This building was to function as a counting house and place of business for the Company of the Indies. Doubtless there were other structures within the walls of Boisbriant's fort: e.g., barracks, a bakery, a powder magazine, and a commandant's residence. Moreover, it is entirely possible that civilian structures—houses, barns, and other out-buildings—may have been built on the site after the first fort was abandoned in 1725 or 1726.

Magnetometer surveys and limited test excavations have demonstrated the existence of numerous subsurface features within the perimeter of the fort at the Laurens site. Further excavations, with study of these features and associated artifacts, may well permit scholars to assign more-precise dates for these features and for the site in general. This would be a first step in further work at the site, after which significant headway could be made on a scholarly reconstruction of the entire milieu at the fort: lifestyles of the soldiers, economic patterns, associations with the Indians, relationships with the civil community, use of black slaves, and so forth.

Given the abundance of faunal remains at Laurens, additional archaeological investigations would be enriched by including zooarchaeology. The focus of future faunal analyses at the site should be directed at discerning if a distinct pattern of animal exploitation can be recognized for the initial French military occupation of the fort. Although the stockade trenches contain many faunal remains, they were deposited after the stockade had been razed. Refuse pits dug and used by the French—both soldiers and civilians—are likely to be present, and, if found and exploited archaeologically, could prove to be rich sources of data. Additional effort might be directed at discerning whether high proportions of bird bones (and perhaps other animal classes or species) in specific contexts are valid indicators of high socioeconomic status. Other categories of faunal remains (e.g., skeletal portions) may also be correlated with status levels of various inhabitants. A rigorous program of small-scale data recovery (i.e., flotation and water-screening) should also be used in any future archaeological research at the site to ensure the recovery of representative samples of both small and large-bodied species. Ethnobotanical analysis of plant remains would also provide important new data concerning French colonial subsistence patterns in the American Bottom region.

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EXCAVATIONS AT THE LAURENS SITE SPRINGF
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Excavations at the Laurens Site: Prob
of Fort de Chartres I is the fifth in the
Illinois Archaeology series published by t
tion Services Division of the Illinois Histor
tion Agency. The Laurens site lies near t
end of the extensive French Colonial Histo
which includes a number of early French Colonial and historic Indian sites in southwestern Illinois. This study is part of the Illinois Historic Preservation Agency's continuing research and management of those French Colonial historic resources.

Fort de Chartres I, the first of three forts to bear the name, was constructed in 1719–1720 on the banks of the Mississippi River in what is today Randolph County, Illinois. Centrally located between the major French habitations at Cahokia and Kaskaskia and in the heart of the Illinois Indian settlements, the fort also provided easy access to the lead-mining areas just across the Mississippi River.

Fort de Chartres I was replaced by another wooden fort in 1726. Eventually this fort was also replaced in the 1750s by the massive stone Fort de Chartres III, which, partially reconstructed, is maintained as a State Historic Site by the Illinois Historic Preservation Agency.

After having been lost for more than two and one-half centuries, Fort de Chartres I re-emerged through a fortunate series of events including clever detective efforts by an amateur archaeologist, the discovery of an aerial photograph clearly showing the fort, soil chemical and magnetic investigations to pinpoint subsurface anomalies, and finally limited archaeological testing. These investigations revealed the presence of two palisade walls, internal pit features, and numerous eighteenth-century French ceramics, glass, gun parts, and brass buttons.

This study reports the historical and archaeological evidence for the long-lost Fort de Chartres I and presents our first glimpse of the material culture and subsistence of this important French Colonial site. This work adds important dimensions to the growing body of historical archaeology of early French Illinois.